The Veterinary Record

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S., 1888.

No. 9. FEBRUARY 27, 1932. Vol. 12.

POISONOUS PLANTS MET WITH IN COUNTRY PRACTICE*

C. J. Pugh, M.R.C.V.S.,
Chepstow

My reason for bringing this subject before you is that during my short experience in a country practice, the necessity of a fair knowledge of the common plants that are a menace to live-stock during certain seasons has been brought most forcibly home to me.

Apart from indigenous plants of the farm, well known to be poisonous, there are quite a number that are suspected to be harmful and poisonous to a certain degree, in that they produce various systemic changes in the animal and in some cases cause the milk of the cows to be tainted—which in itself may involve the dairy farmer in grave loss.

As one cannot hope to exhaust this subject or include a full enumeration of poisonous plants in a paper of this kind, I do not propose to go into the subject deeply, but to limit myself to mentioning the commonest of these plants—giving their outline; their active poison, where known, the clinical symptoms caused by the poison, and the antidotal treatment.

It is not my intention to bore you with groups of long botanical names.

I propose dealing with these plants in the sequence of their natural orders.

Coniferæ or Pine Family.—Members of this family are the source of turpentine, and the coniferæ in general are distinguished by containing essential oils such as savin from *Juniper sabina.*

The poisonous effects of overdosage of turpentine have long been recognised, large doses causing intestinal irritation and some ulceration, while, through its irritant effect on the kidneys, it will cause hæmaturea. After absorption the oil exercises paralysing effects in the same order as those of alcohol. Savin tops, containing oil of savin, are reputed to cause abortion. Horses sometimes fall victims of the poisoning through eating cuttings.

Symptoms.—Those of an irritant—colicy pains, etc.—in the first stage, followed by complete stoppage of the digestive tract.

Treatment.—Small doses of opium, aperients, demulcents and stimulants.

The order coniferæ includes yew or *Taxus baccata*—and its varieties such as the Irish yew (*Taxus fastigiata*) and the yellow yew—all of which are very poisonous, due to the liquid alkaloid *taxine.* They also contain the irritant essential oils.

Taxine, the active poison, occurs in the leaves of all species, but only in small quantities in the berries, and according to some authorities the undried leaves yield on extraction from ·1 to ·18 per cent. of taxine. The leaves of the male also contain more of the alkaloid than those of the female, but the difference is very little.

Symptoms.—A remarkable feature of yew poisoning is its rapidity. Often I have made *post-mortem* examinations and found that the animal had dropped and died while actually eating the yew. If the animal is seen early enough after eating yew, it is observed suddenly to stop, start blowing and trembling, fall and die within five minutes, with symptoms like apoplexy. The alkaloid paralyses the alimentary system with stoppage of digestion, and death ensues from suffocation.

Post-mortem Appearances.—One finds the stomach very distended owing to fermentation following the arrest of the digestion. There is intense inflammation of the stomach mucous membranes; the liver, spleen, kidneys and lungs are engorged with dark blood, the left heart being distended with dark, tarry-looking blood and the right being empty.

Treatment.—These cases are always very grave and rumenotomy is recommended by some. Give orally a soda bicarbonate emulsion of one pint of linseed oil with two ounces each of chlorodyne and nitrous ether, followed by whisky and linseed oil. Repeat with stimulants and opium (chlorodyne). Hot coffee (strong) and alcohol to combat the narcotic effects of the alkaloid taxine.

Araceæ.—The only member of this order found wild in Great Britain is the *Arum maculatum,* also known as the cuckoo-pint, lords and ladies, wild arum, water robin or Portland sago. This plant is a familiar hedge grower, having a tuberous root-stock, flowering in May and having scarlet clustered berries in August. The leaves are glossy, halberd-shaped and spotted.

This plant contains an acrid juice of unknown chemical nature, which has the effect of a very powerful irritant. The juice is present in all parts of the plant and drying deprives it of its activity. Formerly starch for laundry purposes, and a kind of sago used to be made from this plant.

Symptoms.—Intense irritation, purgation, vomiting (when possible), with the after-effects of convulsion, exhaustion and death from shock.

*Paper presented to the Mid-West and South Wales Division, N.V.M.A., Annual Meeting, Bristol, January 15th, 1932.

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Treatment.—Demulcents and stimulants.

Dioscoridaceæ.—The yam family include one poisonous British species, namely, *Tamus communis,* the black bryony, ladies' seal or Isle of Wight vine. This plant is a climber, twining over hedges, and known by its heart-shaped shining leaves with a tapering point, turning black in autumn. The berries are scarlet.

The active principle resembles "bryonin," the purgative glucoside of the white bryony.

Ranunculaceæ.—The following are the chief plants containing toxic principles—aconitum, helleborus, delphinium and ranunculus.

Aconitum napellus (Monk's hood or wolf's bane).—This is a plant of cultivation in Great Britain. Its stem is firm and 1½ to 2 feet high. Leaves stalked, and the upper ones nearly sessile, of a dark green colour; slightly downy, divided to the base into five or seven deeply cut linear, pointed segments. Its flower is large, dark blue, on erect pedicles forming a handsome, dense, terminal raceme.

The upper helmet-shaped sepal at first conceals the lateral ones, but is ultimately thrown back. There are three carpels which are often united at the base of the plant. It is an occupant of moist pastures, thickets and waste places.

This plant is very dangerous owing to its exceedingly poisonous alkaloid, *aconitine,* which acts as a gastro-intestinal irritant and exercises its general effects upon the medullary vagus centre, producing cardiac depression with a marked fall of blood pressure—respiration becoming very slow. Aconitine is chiefly present in the root and in less proportion in the leaves, flowers and seeds.

The maximum content of alkaloid is attained just before flowering—and the proportion is less in the plant growing in higher latitudes than in lower.

Symptoms of Aconite Poisoning.—As stated, aconitine is a very powerful alkaloid poison. It is quoted by Finlay Dunn that ¾ a grain would kill a dog of 30 lbs. in 65 minutes. The toxic dose on injection is estimated at one-sixth of a grain for the horse and one-thirtieth grain for the dog.

The poisonous symptoms are very characteristic, *viz.*:—marked champing of the jaws, copious salivation, eructation of frothy matter and continued attempts to vomit. The gait is staggering. There are intense colic, purgation and spasmodic contraction of the diaphragm. Paralysis follows, the respiration becoming very difficult and laboured. The heart and pulse are weak, the pupils are dilated, membranes blanched and temperature becomes subnormal. Convulsions follow and death occurs from asphyxia.

In the dog aconite poisoning is marked by profuse salivation, violent vomiting and purgation. There is champing of the jaws and the dog rubs his nose with his paws a great deal. His heart beats and respiration gradually weaken and death ensues.

On Post-mortem, the chief changes found are acute gastro-enteritis and extensive studs or patches of extravasated blood, the right heart being engorged and the left empty; the air passages contain a great deal of frothy mucus.

Treatment.—In the dog, give an emetic of apomorphine or mustard in water, or copper sulphate or zinc sulphate in a little water. Follow with egg albumin and a mixture of chlorodyne and lime water.

In the horse and the large animals give large doses of purgatives and whisky. The stomach pump is sometimes used. Give heart stimulants, ether, digitalis, hot coffee.

Helleborus.—The black and green hellebores are both poisonous, especially the root, from which the extract is made. The active principle is the glucoside helleborein, the action of which is similar to that of digitalis. The hellebore acts as an irritant.

Treatment.—Mucilaginous draughts, stimulants, purgatives.

Delphinium (Larkspur, Stavesacre).—The seeds contain the poisonous alkaloid, *delphinine,* resembling aconitine, with the same action, etc.

Ranunculus includes the common buttercup (*R. bulbosus*), upright meadow crowfoot, celery-leaved crowfoot, great spearwort and the lesser celandine.

The Ranunculacæ all contain acrid juices whose chemical nature is not well understood. A volatile acid—ficaric acid—has been isolated and also a substance ficarin.

Symptoms.—Colic, vomition, excessive salivation, slowing of the pulse and blindness—one sees a marked rolling of the eyes.

Treatment.—Mild purgatives, demulcents and stimulants. Give nitrous ether, peppermint water, tincture of opium and, in the horse, administer a ʒiv physic ball.

Cruciferæ.—The genera of this order credited with poisonous properties are *Brassica Cochlearia, Raphanus* and *Sisymbrium.* All these plants owe their activity to volatile or essential oils of the type of mustard oil (allyl sulphocyanide).

In the *black mustard seed* is a glucoside, myronic acid, which is resolved by ferments or acids into glucose, potassium acid sulphate and mustard oil. White mustard contains sinalbin. *Brassica alba,* the cultivated or white mustard; *Brassica sinapis,* or wild mustard; *Brassica nigra* (black mustard); and *Cochlearia armoracia,* or horse radish, are all poisonous.

Symptoms.—In the horse black mustard produces bronchial symptoms, marked by great difficulty in breathing and the discharge of great quantities of yellowish, frothy matter from the nose.

Post-mortem.—Pulmonary congestion, injected bronchi containing a frothy yellow liquid with a marked odour of mustard oil.

J. Gerrard (1875) records the effects of poisoning in cattle when given cake containing the whole mustard seed.

Symptoms in cattle are great uneasiness, restlessness, intense colicy pains with frantic rushing to and fro, ending in complete exhaustion, falling, struggling and collapse.

Caryophyllaceæ.—The chief plant of this order that I should like to mention is the corn cockle (*Agrostemma githago*), which is a common plant of the corn fields. It is tall and erect, with straight narrow leaves up to five inches long, placed opposite one another on the stem in pairs. The flowers are borne singly on long stalks which spring from the axils of the leaves. They are about 1½ inches in diameter, with five petals (pale purple), which appear in June, July and August. The seed capsule is large and contains twenty to thirty rough black seeds, resembling curled-up caterpillars, and which are nearly the size of the grain of wheat; for this reason they can only be separated with great difficulty from the wheat cereal during threshing. If it is present in great quantities it is quite impossible to separate it.

This plant is very harmful, because of the fact that the seeds are ground up with the corn (wheat), discolouring the flour and imparting to bread a greyish tint and disagreeable odour.

Recently I have had typical cases of poisoning in pigs due to the presence of this corn cockle in bad samples of sharps.

Symptoms.—In pigs there is severe gastro-enteritis with purgation and vomiting, the passage of blood-tinged fæcal matter, paralysis, coma and death.

Treatment.—Copious supply of fresh milk; opiates against pain, and stimulants.

Colchicaceæ.—The most important and the best-known plant of this order is the *Meadow saffron—Colchicum autumnale*. At the end of flowering in August there are no leaves, the brown bulb ending in a sheath of brown scales enclosing the base of the flower, the long tube of which rises three to four inches above the ground with six oblong segments 1½ inches long. When the leaves appear, in spring, they attain a length of eight to 10 inches and a breadth of 1 to 1½ inches. The capsule is then raised to the surface of the ground by the lengthening of the peduncle; soon after, the leaves wither away. The plant is chiefly found in moist meadows and pastures.

The active poison of colchicum is the alkaloid colchicine which is not destroyed on drying or boiling but passes into the water. Poisoning of animals may occur in the spring from the eating of the young leaves or in autumn through the eating of the flowers in the pastures.

Colchicine is slowly absorbed and only exhibits toxic effects after a comparatively long period—these effects tend to be cumulative.

Symptoms.—I have seen several cases of this poisoning in cattle and the symptoms are as follows:—

Incoördination, staggering gait, excessive urination, violent purgation, sub-normal temperature, shivering. Blood may be present in both the milk and urine. There are profuse dribbling of saliva, cessation of rumination, acute abdominal pain. In very severe cases death takes place in 16 to 24 hours. Abortion is common in pregnant cows.

Treatment.—Give large quantities of demulcent drinks and strong doses of tannic and gallic acids. If the animal is in great pain, give opium or a hypodermic injection of morphia. Should there be danger of collapse give ammonia, alcohol and strong coffee.

Eradicate the plant from the pastures in the autumn, when its striking pale purple, crocus-like flowers can easily be seen. Dig up the bulbs and collect them.

Umbelliferæ.—A number of wild plants of this group are highly poisonous—they are related to the carrot and parsley group.

The most important of them are the hemlock, water dropwort, cowbane, or water hemlock, and fool's parsley.

Hemlock—Conium maculatum, or spotted hemlock, is the source of the volatile alkaloid conine and as a common weed has caused dangerous poisoning in the larger animals. The general effect of conine is that of a paralysant. In the horse there are exhibited nausea, accelerated respiration, great muscular trembling (beginning in the posterior limbs) and paralysis; sub-normal temperature, rapid pulse and death by arrest of respiration. In cattle there are marked stupor and arrest of digestion; sometimes there is constipation, at others bloody fæces are passed.

Treatment.—Evacuation of the stomach and the administration of purgatives, tannic acid and stimulants. The patient should be kept warm.

Cowbane or Water Hemlock.—The root of this plant is very dangerous, for the active principle, cicutoxin, is a powerful narcotic.

Cobbald observed in Brittany an instance in which eleven beasts died with violent symptoms of vertigo. The animals appear to die without a struggle.

In the horse nervous symptoms predominate.

Ericaceæ.—The family includes the very ornamental shrubs, rhododendron, azalea and kalmia.

Rhododendron leaves are dangerous. In cattle they cause intense pain, diarrhœa and discomfort, gritting of the teeth, salivation and frequent vomiting. There is cessation of lactation. Trembling and spasms precede loss of power and death.

Treatment.—Give oleaginous purgatives, then chlorodyne to relieve the abdominal pain, followed by stimulants and tonics.

Solanaceæ.—The four British genera of this order—atropa, hyoscyamus, datura and solanum

—comprise some of our commonest poisonous plants.

The most dangerous of these is the *Atropa belladonna* or deadly nightshade, which is found in waste and stony places in chalky districts. By reason of its scarcity and because most of the poison is in its roots, cases of poisoning are comparatively rare, but in each case of poisoning I have had there has always been the same history to the case—it so happened that the roadman was trimming the hedge and in so doing had found some *Atropa belladonna* pulled out by the roots and had thrown it over the hedge into the field where the cattle were grazing.

Symptoms.—Dryness of the mouth, temperature elevated and increased pulse and respiration, marked dilatation of the pupil, blindness, nervousness, dilirium and muscular trembling. After the period of excitement is over, one finds paralysis, very feeble and slow respiration. Relaxation of the sphincters occurs and death in convulsions follows.

Treatment.—Give eserine hypodermically, orally administer hot coffee and stimulants. The only symptom of differentiation between *Atropa belladonna* and *Hyocsyamus niger,* or black henbane, is that henbane is far more depressant and in this case there is profuse salivation.

Laurel Poisoning.—As this shrub is so well known, no description is necessary. Laurel (*Prunus laurocerasus*) has caused poisoning among cattle and sheep. This plant possesses a characteristic odour and a bitter taste when its leaves are bruised. This is due to the cyanogenetic glucoside prulaurasin, which is contained in the parenchyma of the leaves. There is also an ezyme emulsion and the interaction between the two substances results in the formation of hydrocynic acid (prussic acid), which is the actual cause of the poisoning.

Symptoms.—Prussic acid is one of the most rapid of the poisons and produces symptoms in a very short time after the leaves have been eaten. The animal staggers and falls; it may attempt to rise, but fails. The stomach rapidly becomes distended with gas; the animal's limbs are outstretched to their fullest and these are moved to and fro very quickly as if galloping; the pupils are fully dilated, the respirations become laboured, and if the animal is not attended to death occurs. Respirations cease first and the heart stops a few minutes afterwards.

Treatment.—Douche with large amounts of cold water to the spine and head and slap all over with cold, wet cloths; rub the body hard with a brush. Give hypodermic injection of ether, inhalations of ammonia and small doses of spirit.

Compositæ.—The thistle family.

Ragwort (*Senecio jacobœa*).—This plant is distinctly poisonous to cattle, though not so rapidly so as to cause immediate apparent symptoms after a meal of the weed. This is because the poison is cumulative.

In Canada ragwort is incriminated as the cause of "Picton" cattle disease, or cirrhosis of the liver, and the same trouble has been found in New Zealand with sheep.

No cure is at present known and the only plan is to remove the animals from the infested pastures until the weed has been eliminated and to use no forage containing it in the dry state. Ragwort is a scheduled noxious weed and its destruction is compulsory.

Equisetaceæ.—Horse tails are widely distributed throughout the country: they are found in abundance on arable and grass land. The plants are very deeply rooted and are very wiry and harsh to the touch.

There are several different species of this family, but the chief is the *Equisetum arvense.* These plants flourish chiefly in damp soils and their stems resemble those of asparagus.

Equisetum poisoning, or equisetosis, has been known for nearly a hundred years.

This plant is especially poisonous when it occurs in quantity in rough meadow hay.

Symptoms.—Affected horses show symptoms of excitement, uncertainty of movement, staggering, crossing of the fore-legs and later paralysis of the hind limbs. The pulse is quickened and in very bad cases one sees spasmodic convulsions, while the extremities are very cold.

Treatment.—Stop all hay containing this plant; give a liberal supply of oleaginous purgatives and stimulants.

May-Weed Poisoning.—This plant is very similar to the wild marguerite. When eaten in abundance it causes acute poisoning—chiefly found in cattle.

The main characteristic symptom of this poisoning is the icteric appearance of the affected animal: the mucous membranes are quite yellow and the "whites" of the eyes have a peculiar mustard-like appearance. There is acute indigestion.

Treatment.—Give mag. sulph. 1 lb., followed by powder of ammon. carb., gentian and nucis vom., and stimulants.

Plants that affect the milk and dairy produce are as follows:—garlics, hedge mustard, penny grass, yarrow, butterwort, wood sorrel, tansy.

With garlics the oniony flavour may be so strong as to render the meat, milk and dairy products of the animal affected quite unfit for human consumption.

This brings me to the end of my paper; no-one present realises more than I its incompleteness, but I shall be amply rewarded for my efforts if it produces an interesting discussion.

It is stated that the "Eat More Fish" campaign increased the consumption of fish by 17 per cent. in 1931. Of the fish eaten, 20 per cent. was imported.

THE HORSE: ITS PLACE IN THE SCHEME OF TRANSPORT*

T. Eaton Jones, f.r.c.v.s.
Chief Veterinary Officer of the City of Liverpool

The Horse as a National Economic Factor.

There can be no dispute about the statement that up to the present time, the horse has played no small part in the economic life of our nation. The Great War demonstrated that it was not only essential but indispensable in military operations. Remember that horse-drawn vehicles, and pack animals, can still go where mechanically-propelled vehicles fail. Again, in agriculture they play a very important part. Despite the depression existing, agriculture is still the premier industry of the country and anything to-day contributing towards the rehabilitation of a prosperous countryside is surely worth considering. Horse breeding, whether for commerce or pleasure, is an integral part of agriculture, and the failure of the country to make full and proper use of the horse in every sphere will be fraught with disastrous consequences. A conservative estimate of the number of industrial horses in Great Britain is 300,000, which, on an average of £40 per head, per annum, for feeding, provides a market for £12,000,000 worth of agricultural produce. Any marked reduction in the horse strength of the country will have an appreciable effect on the agricultural situation.

Considering that practically everything connected with the horse—food, litter, harness, vehicle, etc.—can be produced within our country, there is little doubt that in the proper and full use of the animal's services a valuable contribution to the welfare of the nation is being made, and, in addition, is helping an industry that is always very hardly hit in times of depression.

An increase in the demand for horses for commercial purposes would have far-reaching consequences and buyers would speedily reap the benefit resulting from lower capital outlay. Before the horse enters upon a life of commercial usefulness it can, with advantage, be utilised on the farm, and when its work on the roads is done it can return to the land. A horse at two years old is fit for work on the land. At five he comes into town work and is put to hard work. From five to seven his value is appreciating, so that as a seasoned animal, with five years of work in hand, he is worth more than on the day he was bought. He has still quite another five years of good work and after that can return to agriculture. What five-ton motor lorry can equal this for sheer value? The moment a motor leaves the maker's works and is put into use, it becomes "second hand" and its depreciation, from a market point of view, is so rapid that in about five years it must be "written off." If this is taken in conjunction with the heavy cost of upkeep, repairs and renewals, it has to be admitted that the "motor age" is expensive and the employment of motors in business and commercial pursuits adds to the cost of commodities and tends to keep up the high cost of living.

Congestion in Large Cities

To dispute the contention that the horse-drawn vehicle is the main factor in traffic congestion I would direct attention to the decision of the authorities to prohibit it from the use of Oxford Street, London. Despite this decision I have yet to be convinced that the congestion is any the less—in fact observation proves that it is still as bad as it ever was. Most of the horses used in London traffic move at the trot, and, as the average speed of mechanically propelled vehicles, in crowded areas, is only in the region of six to seven miles per hour, I fail to see that the exclusion of horses will solve the problem. The satisfactory settlement of the traffic problem in our large cities is largely a matter of providing alternative routes.

The Horse in Modern Transport

I would draw attention to the animal's capabilities. A horse load appears to be thought of by the average person as something weighing a few hundredweights, whereas, given the right type of animal and vehicle, the weights capable of being moved will compare favourably with those placed on most of our mechanically propelled street vehicles to-day.

In many places I have noticed a horse drawing a vehicle and appearing to be hauling a maximum load, but a closer study reveals that he is only utilising a very small percentage of his power. If the animal's capabilities were properly understood and a suitable vehicle provided, that load could, in many cases, be increased several times, and it would still be within his power to haul it. Speaking particularly of the heavy horse as we know it in Liverpool we can say "Here is the type of animal to justify its employment in heavy haulage."

Provision of Proper Vehicles

Next in importance is the provision of a proper vehicle. It is a matter for regret that so little attention has been paid to the improvement and adaptation to modern conditions of horse-drawn vehicles. A little attention would amply be repaid. I suggest that a vehicle with a low loading line, equipped with improved oiling and ball-bearing devices, and improved harness, would do much to enable the horse to draw

* Abstract of a paper read before the Manchester-Liverpool and District Section of the Institute of Transport on October 30th, 1931. Reprinted by permission from the December issue of the *Journal of the Institute of Transport*; also by permission of the National Horse Association of Great Britain.

bigger loads at lower cost. With the exception of one or two experiments in recent times by municipalities, there has been little or no endeavour to improve horse-drawn vehicles within the last half century. Even with the types of vehicles in use nowadays—old-fashioned as they are—the weights capable of being hauled by horses are not fully realised. The following estimates may be of interest:—

A heavy single horse, according to the vehicle to which he is attached, can haul weights from two to seven tons per load, during a day's work involving from 12 to 20 miles.

A team of two heavy horses, with suitable vehicles, can haul loads of from four to 14 tons, and do 12 to 20 miles per day.

A single vanner horse can deal with loads of from one to two tons and maintain a daily mileage of from 15 to 20.

A single light horse can deal with loads of from 10 to 25 cwt. and do 18 to 20 miles per day.

A canal boat horse can haul a boat loaded up to 80 tons and do 20 miles per day.

The Horse Efficiently Employed

The short haul in towns is peculiarly the province of the horse. In all large commercial towns the docks, warehouses and goods yards are in close proximity, consequently there is a preponderance of short hauls. Tests made on mixed loads showed that when motors were employed on this class of work only 27 per cent. of the total motor time was in actual movement. Seventy-three per cent. must therefore have been taken up in loading and unloading, waiting turns at warehouses, etc. *Thus the advantage claimed for the motor,* i.e., *speed, only applies for approximately one quarter of the working day.* This in insufficient to counter the difference in the comparative costs of a motor unit and a horse unit.

Again, let us take the collecting and distribution from central depôts; the collecting of packages and their distribution are jobs that take time, necessitate frequent stoppages, and probably do not involve very great mileage. A practical illustration of this is the collecting of sundry materials, a job calling for time in handling and loading and necessitating frequent stoppages in a house-to-house collection. I find that quite three-quarters of the working day is taken up in this way. *A recent test established the desirability of employing horses on the collection of refuse.* The conveyance of this refuse was found to be best dealt with by motors, as tipping at the various dumps on the outskirts called for a straight run of four to five miles. The co-ordinating of the two forms of transport resulted in efficiency and economy and the horse has definitely established a place for itself in this class of work.

The Horse for House-to-House Deliveries

For the same reason, I would employ horse-drawn vehicles on house-to-house deliveries of daily domestic requirements. *The costs quoted at the end of this paper will convey some idea of what an economical proposition the horse is when managed on sound lines and justify a more extensive use of the animal in present day transport.* Notwithstanding the economic facts in his favour for short hauls and town deliveries, there seems to be a tendency for the large stores, and other firms similarly engaged in distribution, to introduce motors. This is due to the call for speed, the demand for special facilities, and possibly the state of business at the present time when many firms are trading on the hand-to-mouth principle and the necessity for immediate attention to an order counts.

Other factors being equal, costs of delivery have always been proportionate to speed. At first sight the question of speed and quick delivery appear to be very favourable to the motor vehicle, but the advantage must be limited by the thought that if all the business is to be rushed out early in the morning to provide every customer with special facilities, then there is going to be a great amount of unremunerative time later in the day. If the work is spread over a longer period and a steady flow maintained then the slower, but cheaper mode of transport comes into its own.

For the motor to compete economically with the horse, it is necessary that a motor vehicle of the 2 to 2½ tons type should do the work of two horses, and a motor of the 4 to 5 tons type the work of 2½ to 3 horses. On certain town and dock work, such as I have already mentioned, this is, on the average, impossible. I claim that each form, in its own sphere, is a contributory factor to efficiency. The essence of efficiency is the correct blending and use of the various units. From information at my disposal it would appear that, for firms whose hauls are mainly short distances, the ratio is 1 to 4, that is, if 100 units are employed, 20 will be motors and 80 horse-drawn. Inversely if there is a preponderance of long hauls more motors will be used and the horse units cut down. It is bad business to use a motor on a horse haul or a horse on a motor haul. If the right type of animal and vehicle are used, detailed costings kept, and expert management exercised, the horse will not only maintain its place but be used to a greater extent in the transport of the future.

Costs

A leading London transport firm, on the basis of a 20 mile day, gives costings as follows:—

	Light (single) horsed vehicle	Heavy horsed vehicle (2 horses)	Light motor van (25 cwt.)	Heavy motor lorry (4 tons)
	s. d.	s. d.	s. d.	s. d.
Cost per day (8 hours)	17 9 ...	25 7 ...	24 2 ...	36 6
Cost per hour	2 2½ ...	3 2½ ...	3 0¼ ...	4 6½

Tests Made in the Use of Horse and Motor Haulage

The figures quoted below were arrived at after tests made over a period of some months. Selected areas were used for horse haulage for the first half of the period, and other selected areas were used for motor haulage for the same period. For the remainder of the test the horses were required to work the motor areas and the motors the horse areas. The figures do not include any proportion of overhead charges or profit.

Total cost of collection and conveyance of material was:—

	£
By motor	4,732
By horse	4,324
Total	£9,056

Cost per ton of collection and conveyance was:—

	s.	d.
By motor	10	2·99
By horse	10	1·64

Difference in favour of collection and conveyance by horse was 1·35d. per ton.

In substantiation of the claim that the horse is the most economical unit for work necessitating frequent stoppages, the following figures relating to collecting are interesting:—

Total cost of collection:—

	£
By motor	4,227
By horse	3,395

Cost per ton of collection:—

	s.	d.
By motor	9	1·86
By horse	7	11·51

Difference per ton in favour of collection by horse:—1s. 2·35d.

Cost of maintaining a single (heavy) horse, vehicle and driver on the basis of a 48 hour week:—

	£	s.	d.
Wages of driver	2	17	0
Horse (allowing for purchase, renewal, food, litter, stabling, harness, etc.) ...	2	8	0
Vehicle		5	0
Health and Unemployment Insurance		1	7
Stable duty and cleaning gears		2	3
Holidays		1	0
Loss of time shoeing ...			9
Lighting			2½
Insurances (third party and accident)			9
Contingencies			5½
	£5	17	0

	s.	d.
On the basis of a 48 hour week the cost per hour is	2	5½

(This figure includes provision for overhead charges and leaves a small surplus.)

A voluntary scheme for the periodic testing of milk is being considered by the Isle of Man Board of Agriculture. Milk producers would be asked to submit samples of milk for microscopical examination at regular intervals, and certificates would be issued to those whose milk conformed to a fixed standard.

The Veterinary Record

February 27th, 1932.

GENETICS AND VETERINARY SCIENCE

IT is possible that some who read the article on "Science and Animal Production," by Professor Crew, which is reviewed in this issue, will be conscious of a vague feeling of disappointment or impatience: disappointment that the difficulties confronting the animal geneticist are so great; and impatience with the expression of such apparently unorthodox views of the future. During the last 20 years or less we have gradually become used to the idea of the genetic manipulation of plants to give us new varieties in amazing profusion; seedsman, florist and agronomist have each forced us into a consciousness of the existence of a science which, in the hands of man, allows him to mould his plants at will. This consciousness has led to the germination in our minds of an expectation that we have only a short time to wait for the demonstration of similar dramatic results from animal genetics. Plant genetics have matured early; why should not animal genetics also mature early? It is perhaps too seldom realised that the animal breeder, utilising methods empirically which are slowly being shown to be truly scientific, has progressed quite as far as has the plant breeder. But while the former evolved his Pekingese and his Greyhound, his Shire and his Shetland, or his Lincoln and his Southdown, slowly and with much labour, the latter, starting late, has made spectacular strides with ease. While the plant breeder may have all the members of a hundred families of a species in his hands at one time, one family of animals may have its members scattered through a hundred breeders' hands not at one time. Nevertheless, the results have been obtained.

What then remains to be done? What further improvements in our livestock do we still await? Some of these are indicated in the article to which reference has been made, while there are undoubtedly many others of more immediate import. For the full solution of certain of the relevant problems the sympathetic co-operation of the breeder is sought. The latter, oppressed as he is by the massive inertia of established practice, does not always desire to reorient his views, nor does he love a new nomenclature. Moreover, his economic background is ever-changing, and he must be

convinced by demonstrable proof that a sudden departure from the customs of his forefathers does not lead him to the bankruptcy court. It seems that here is a function of the veterinarian. Given a command of genetic principle (and of its vocabulary) and armed as he is (or should be) with a modern physiological outlook, he can act as the liaison between scientific geneticist and practical breeder and thereby add his quota of aid in the march of human progress. For this to be successful, however, he must know his subject, his training must be adequate. Genetics has been looked upon with fear or else without great favour by most of our teaching schools in Great Britain, while on the Continent and in the Agricultural Colleges everywhere it has for long been recognised as a subject of importance. It would seem well that in the so-called " stud-farm country " the veterinarian should be equipped at least as well as are his confrères abroad and preferably better than are many of his agricultural clients at home, in the fundamentals of genetic reasoning and practice.

CATTLE IMPROVEMENT IN SCOTLAND

" The scheme of the Department of Agriculture for Scotland for the improvement of cattle during the current year is outlined in a leaflet which the Department issued last month," says the *Scottish Farmer*. " As usual the scheme falls into two distinct parts. The first part, which is applicable only to the counties of Argyll, Inverness, Ross and Cromarty, Sutherland, Caithness, Orkney and Shetland, is a scheme for supplying bulls on loan to crofters' common grazings and committees of crofters. The second part of the scheme, which is applicable to the whole of Scotland, makes provision for offering grants to (*a*) township committees and societies; and (*b*) agricultural or co-operative societies, for the purchase or hire of bulls of approved merit for the service of cows belonging to their members. The township committees, in order to take advantage of the scheme, must represent the owners of not less than 40 cows; and the approved societies must consist of not less than ten members owning at least 40 cows. The service fees are fixed by the society, subject to the approval of the Department; and the fees for the service of cows belonging to small farmers, farm servants, shepherds and cottars are fixed at a lower rate than those charged to large farmers. The grant payable in respect of yearling bulls purchased by committees or societies are £15 to Aberdeen-Angus and Shorthorn bulls, £10 to Galloway, Ayrshire and Highland bulls, and £7 10s. for Shetland bulls; but the grant will not exceed 50 per cent. of the purchase price. In the second year of the premium £12 is payable for Aberdeen-Angus and Shorthorn bulls, and £10 in the third and subsequent years, the premiums for other breeds being scaled down in proportion. The grant payable in respect of bulls hired is equal to four-fifths of the grant for a bull that is purchased."

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Owing to the financial stringency the Government have decided not to supply the fighting services with home-fed beef.

Clinical and Case Reports

RUPTURE OF THE ANTERIOR CRUCIATE LIGAMENT IN THE DOG

Geoffrey B. Brook, b.sc., m.r.c.v.s.

The writer has been unable to find a record in veterinary literature in English of rupture of the anterior cruciate ligament of the femorotibial joint in the dog.

Subject.—Scottish terrier, male, aged nine and a half years.

Past History.—The dog came into the possession of the present owner when eight weeks old and was run over by a car some two months later, but no details of the nature of the accident or injuries sustained were available. Since that time, however, at intervals of from one to two months, the animal would suddenly emit a cry of pain, carry the right hind leg and refuse to use it for some days. Before an ensuing attack a perfect recovery had usually been made.

Fig. I.

Present History.—The animal was galloping vigorously about at exercise when he suddenly cried out with pain. The right hind leg appeared to the owner to be "paralysed," as the animal refused to bend it and dragged it behind him after the manner of a horse with dislocation of the patella. This new symptom led the owner to seek professional advice.

Examination.—The dog was examined three hours after the attack. When allowed to walk the animal carried the right hind leg in the typical "flexed" position of an injured limb. When the dog was running or pulling at the lead some weight was placed on the toes.

Manipulation of the femoro-tibial joint elicited crepitation which could not always be reproduced. The femur could be rotated upon the head of the tibia, particularly in a clockwise direction, to a greater degree than in the case of the other limb. No pain was evinced during these passive movements. The tibial crest appeared to be in an advanced position in relation to the femur.

X-rays photographs were taken of the joint and its fellow of the opposite side and are reproduced as Figures 1, 2 and 3.

Fig. II.

Fig. 1 illustrates how the tibia has moved forward in relation to the femur and the rotation of the latter in a clockwise direction upon the head of the tibia.

Fig. 2 is a lateral view of the affected joint and Fig. 3 a similar view (reversed on printing) of the corresponding joint of the opposite limb. In each case a vertical line A-B has been dropped from the anterior face of the patella on to the tibia. A comparison will readily show how far forward the tibia is in relation to the femur in the case of the affected leg. The distance between the two lines XY and X^1Y^1 in Figs. 2 and 3 respectively indicates the degree of rotation of the femur which has taken place in the affected leg.

On these findings a diagnosis of rupture of a crucial ligament was made. The owner asked that the dog be put to sleep unless a cure could be guaranteed. Morphia and chloroform were given two days later.

Post-mortem Findings.—The femoro-tibial joint capsules were distended with a blood-stained synovia which, when released by incision, was seen to contain some fine reddish-

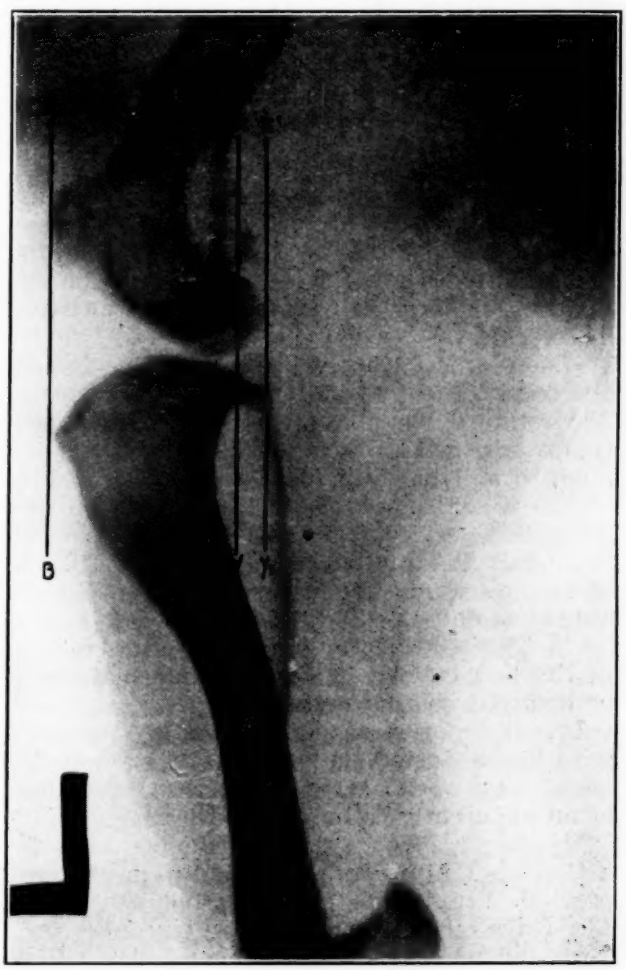

Fig. III.

coloured string-like structures—probably shreds of blood clot. The anterior cruciate ligament (Lig. Cruciatum anterius. Sisson) was found to have been ruptured at a point about one-third of the way from its tibial to its femoral attachment. The ends of the ligament at the position of the rupture were ragged. That of the distal segment was distinctly flattened and tapered wedge-like to a thin edge, suggesting that it had been pressed between opposing joint surfaces. When the bones were articulated it was impossible to bring the ruptured ends together, the two segments of the ligament being too short to bridge the distance between their points of anchorage. No sign of a detached portion of the ligament could be found within the joint structure.

No microscopical examinations of the joint or the ligament involved were made.

The writer wishes to state that this case occurred in the practice of the late Major R. Catmur, Abingdon, and that it was with his portable apparatus that the X-ray photographs were taken.

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SOME UNUSUAL PREGNANCIES

R. H. Smythe, m.r.c.v.s.,
Camborne

I.—Pedigree Guernsey cow, whilst being driven on the road, collided with a steam-lorry. The same evening she aborted an eight-months, dead, calf. The owner took legal proceedings, but two days before the case was to be heard and exactly one month after the date of the accident, the cow gave birth to a normal living heifer calf.

II.—A thoroughbred mare, eight years, aborted a dead foal at ten months' pregnancy. She retained the placenta and received appropriate treatment. Five weeks later she gave birth to a living filly foal.

III.—Guernsey-crossbred cow, 12 months after last service, was found on examination to be carrying an abnormally large calf, living and very active. The owner thereupon sold the animal as an " in-calver " and sight was lost of her. This cow suffered from uterine torsion at the last calving but nothing unusual could be detected on this occasion.

IV.—Two ewes out of a flock of 80, each gave birth, during the same week, to a living lamb, four weeks after having been delivered of an apparently full-term dead lamb.

V.—Large black sow, served once only by a Cornish White boar. She had borne several previous litters, the preceding one numbering 13. Gave birth to two pigs one day after full-term and one pig on the following day. Five weeks and five days after the birth of the latter she bore one more live pig of normal full size.

Annotation

COW-POX

In recent issues of the *British Medical Journal*, Dr. D. M. Cathie[1] and Dr. J. N. Cruickshank[2] have recorded the existence of skin eruptions in the human subject which they attribute to the virus of vaccinia contracted from cattle affected with cow-pox. In both instances milkers, who had been in contact with cows suffering from sore teats or udders, subsequently presented vesicular eruptions of a vaccinal type on various parts of the body associated with lymphadenitis and general malaise. These observations are most opportune for they serve to focus attention upon the possible existence of cow-pox in this country.

It is of interest to note that Dr. Frenkel,[3] as a result of recent investigations into eruptive diseases of the udder amongst Dutch cattle, has shown that cow-pox is of not uncommon occurrence; moveover, in his cases the precise nature of the lesions has been clearly established by the transmission of the virus to the rabbit and by cross-immunity experiments in the calf. He is probably justified in holding the opinion that the disease is more widespread in the Netherlands than is generally believed. In this country, however, the incidence of cow-pox has never been exactly estimated. While, therefore, these observations are of considerable interest, they lack the demonstration of the virus of vaccinia either by transmission experiments to suitable animals or by the application of a serological test such as the flocculation reaction devised by Dr. Gordon. In the absence of this crucial evidence it is not certain that the clinical manifestations are sufficient to justify a diagnosis of " vaccinia."

Dr. Hare,[4] who has rightly pointed out that eruptions simulating cow-pox are not infrequent on the udders and teats of cows, has undertaken extensive investigations into the nature of these exanthemata. He[5] has classified the lesions under the main headings of folliculitis and impetigo: the latter is a vesicular eruption which, in his opinion, may be confused with vaccinia. He finds that the predominating organism in the lesions of folliculitis is a *Staphylococcus aureus*, while a streptococcus is responsible for outbreaks of impetigo. Without in any way minimising the value of these observations, it is only fair to point out that these

[1]Cathie, D. M. (1932) *Brit Med. J.* No. 3706, 99.
[2]Cruickshank, J. N. (1932) *Brit. Med. J.*, No. 3708, 216.

[3]Frenkel, H. S. (1930) *Proc. Intern. Vet. Congress*, 3, 22.

[4]Hare, T. (1932) *Brit. Med. J.*, No. 3707, 171.
[5]Hare, T. (1925) *Vet. Rec.*, 5, 943. (1926) *ibid*, 6, 1083. (1927) *ibid*, 7, 885.

organisms, which are ubiquitous on the surface of the udder and teats, are common secondary invaders in many eruptive conditions, and it has yet to be proved that either is capable *per se* of inducing a *transmissible* eruptive disease.

In the absence of carefully controlled experiments showing that the virus of vaccinia, or possibly some other virus, is not primarily responsible for lesions of this nature, it cannot be claimed with certainty that cow-pox is non-existent in this country. An enquiry along these lines should yield interesting and valuable results.

R. E. G.

From *The Veterinarian*

February, 1832.

The Appointment of Veterinary Professors

To the Editor of "The Veterinarian."

Gentlemen,

Referring to the notice of "Concours" about to be held in the ensuing spring, for the election of two professors to the vacant chairs at the Veterinary School at Alfort, and to your pertinent observations thereon, I take the present opportunity of offering to you what have long been my own sentiments on the same subject.

I most cordially agree with you that "the man who has forgotten many a point of minute anatomy might stand but a poor chance against the youngster fresh from school," although his intrinsic and serviceable knowledge would admit of no comparison with the acquirements of the tyro; and yet (seemingly paradoxical enough) such scholastic learning forms the basis of all that age and experience can boast of. I also can feel with you, that "the man possessed of such high acquirements could rarely or never be induced to hazard in such a contest his reputation, which it has cost him the labour of years to acquire."

And having thus politely assented to those two propositions of yours, I trust you will not be so ungrateful as to turn your back upon one I am now going to make, which is this:—that unless you can devise some *safer* mode of election, you had better (even with its confessed objections) adopt this French plan.

Let us see how we English (who are so fond of picking holes in our neighbours' coats) ourselves proceed in such concerns. Most of our *public* medical lecturers, though not in public service or pay as such, become so *ex-officio*, by virtue of their office or rather *function*, as surgeons or physicians to public hospitals, dispensaries, etc., not *necessarily*, but *implicitly*, in consequence of the advantages they possess to render them teachers, and of the superior degree of public confidence and estimation with which they are generally in such situations honoured.

And now for the *election* of these hospital and dispensary surgeons and physicians—how is this conducted? By a majority of votes, which votes are the property of the subscribers or members; the upholders and supporters, in fact, of the institution. And pray, who are these subscribers or members? They are lords and ladies, tinkers and tailors, and the "Lord knows who"; in a word, they are the *public*.

(To be continued.)

Abstracts

[**Science and Animal Production. Breeding: The Application of Genetics.** Crew, F. A. E. *Imperial Bureau of Animal Genetics Quarterly Bulletin* (1932). Vol. 11, No. 5. pp. 97-105.]

Methods of livestock breeding remain very much as they were at the beginning of the present century, in strong contrast to the improvement achieved in plant production during the same period by the application of the science of genetics. Critics of this position are reminded that the usefulness of a science in application is conditioned by circumstances that have nothing to do with the science itself—farm animals are not bred by specialist firms, but by farmers themselves, and it is to be assumed that it was because it was obvious that no private individual could hope to devise and employ methods of animal improvement equivalent to those which have led to continuous advance in the field of plant breeding, that State-created and aided institutions of research in animal genetics were organised. Even these, so far as the larger domesticated animals are concerned, have had to content themselves with herd-book analysis and with the attempted interpretation of the observations of private breeders. Both rectification of lack of resources and equipment and the passage of time are required before these institutions can be expected to produce anything calculated to affect livestock breeding practices.

If genetics has a rôle to play in livestock breeding it is that of defining and of securing a biological type which will harmonise with a predetermined habitat and destiny. Excellence has first to be defined in terms of realities; then comes the problem of demonstrating the mode of inheritance of the desired characteristics and of determining the relative rôles of nature and of nurture in the production and maintenance of these.

The first stage in any programme of livestock improvement in a country is the provision of pedigree sires. Used in a rational fashion, the pedigree system, which is in accord with genetical teaching, provides most useful information; but as a measure of homozygosity the progeny test is more valuable than is pedigree, provided the environment of offspring and sire is standardised.

The next step is the use of pedigree sires on commercial stock, whereby the admirable qualities for which the former have been bred may be impressed upon the latter, reinforcing good with good and covering recessive bad with dominant good. Genetics has its contribution to make towards the solution of the problem of the

elimination of the undesirable. Most defects and derangements of livestock are inherited as recessive characters and are commonly based on more than one hereditary factor. All males exhibitng undesirable characters known to be inherited should, according to the teachings of genetics, be castrated, but the mating test for the " carrier " sire is a formidable undertaking, and, in the absence of some form of laboratory test, all that can be suggested is that if and when the incidence of a seriously detrimental character in a breed becomes high, the State itself, if the breed is to be purged of its disqualifications, may have to undertake the testing of the sires.

The author incorporates an illuminating section on livestock improvement in the Colonies (tropical), wherein he points out the defects of the practice of attempting to improve " native " stocks by importing sires of European breeds. The only sure method of improving a stock is to improve the stockbreeder, the systems of husbandry and the environment; in any event, it has yet to be shown that grading-up of native stock by the use of imported sires is, in its effects upon a livestock population, more rapid than careful selection, in a given direction. It is simple to raise an improved first filial generation: the problem is that of deciding what to do with the second and third, particularly if selection in respect of some later expressed functional quality has to be made in advance.

Concerning the future, Dr. Crew reminds us that most of the inherited characters of live stock which are of economic importance have no counterparts in the ordinary animal material of the geneticist, that they seem to be multifactor in nature and profoundly influenced in their expression by conditions incidental to development: thus it is not likely that much of real and immediate practical value will emerge within a reasonable time from such genetical investigation as is now proceeding. Earlier assistance in determination of the quality and quantity of an animal commodity is to be looked for from advances in the field of endocrinology. The task of genetics in the future may be the synthetic production of animals which, in virtue of their hereditary constitution, will be able to respond in different directions to the specific stimuli of different hormones.

Genetics will not influence livestock breeding practices, however, until it is offered to the students of agriculture and of veterinary science as part of their curricula: only so can the geneticist and the livestock breeder have a common language, " for genetical terms are not to be found in the advertisement columns of agricultural weeklies."

W. B.

[A Study of the B C G Strain of Tubercle Bacillus. Griffith, A. S. *The Lancet*. No. vi of Vol. 1, 1932. February 6th, 1932. 303-308. 14 refs.]

The author recalls that the " Bacille Calmette-Guérin " is stated to be lineally descended from bovine tubercle bacilli isolated by Nocard, in 1901, from the milk of a tuberculous cow. During the course of the subculturing on bile medium to which the strain was subjected from the year 1907, the organism, originally of normal " bovine " virulence, became " less and less tuberculigenic; " and eventually after 230 successive sub-cultures in 13 years, was found to have lost the power of producing progressive tuberculosis in all the domestic species of animals and in the highly-susceptible monkey.

For his investigation, Griffith secured from Professor Calmette two strains of B C G—one in 1921 and the other in 1927—which proved identical, and he now reports the results of virulence tests and makes observations on the cultural characteristics of the strain. Concerning the latter the author finds that B C G grows luxuriantly on ordinary solid media, producing dry coherent crumbly masses, difficult to emulsify. The cultures closely resemble those of the human tubercle bacillus. The strain has retained its cultural characteristics, while the virulence tests reveal no accession of virulence after eight years continuous cultivation of the organism or during long residence in the body of an animal, or after passage through a series of animals.

The strain can produce tuberculous lesions in guinea-pigs, monkeys, rabbits and goats, but those lesions have not a progressive tendency and after a time they heal, or become obsolescent, the bacilli contained within them dying out. In large doses intravenously (or intratracheally) the strain has caused, in rabbits and monkeys, death from tuberculous pneumonia, but this was due to the irritant action of the bacilli and was similar to that which follows the intravenous inoculation of large doses of dead bacilli.

Calmette's contention that B C G may be used as a vaccine without risk of causing progressive tuberculous lesions is supported by the results of these investigations.

W. B.

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[The Control of Contagious Abortion in Denmark. Jensen. *D.T.W.* No. 48. November 28th, 1931. 733.]

The author recalls that, following the lead of Norway, in 1920 the Danish authorities introduced regulations which restricted the movement of animals infected with contagious abortion. These regulations were unsuccessful,

mainly because they were neglected by cattle owners, and in 1927 they were revised, and the disease is now controlled in the following manner:—It is forbidden to allow aborted animals to mix in a common meadow; aborted cows and heifers must not be sold for purposes other than slaughter, without intimating to the buyer that abortion has occurred in his herd; it is forbidden to allow cows and heifers from healthy herds to be served by bulls in affected herds, without disclosing the fact; also, females from an infected herd must not be sent to a strange bull without notifying the owner of the bull. Reference is made to the good effect of these regulations on cattle dealing in general, and the spread of the infection is being checked.

Regarding the control of the disease in individual herds, immediate isolation, combined with strict disinfection of infected stalls, etc., cannot be held to have been satisfactory, on account of practical difficulties. In herds where the blood test has been applied within a few days of the first case of abortion, a high percentage have been found to be affected. Only by repeated blood examinations and isolation of all reactors can a satisfactory result be expected, but this policy, after a long trial, has been abandoned as uneconomical.

The results of vaccination are given:—

(1) Of 772 animals treated with living vaccine, 126, or 16·3 per cent., aborted;

(2) Of 624 animals treated with dead culture, 248, or 39·7 per cent., aborted;

(3) Of 1,889 animals treated with living vaccine 266, or 14·1 per cent., aborted;

(4) Of 1,062 heifers treated with living culture, 153, or 14·4 per cent., aborted;

(5) Of 589 heifers treated with dead culture, 228, or 38·7 per cent., aborted;

(6) Of 206 cows which had aborted, and subsequently were treated with living vaccine, 48 animals, or 23 per cent., aborted;

Controls were not kept, but other and controlled experiments in which living culture was used on heifers showed an even less favourable result. The possibility of producing a local immunity by the injection of dead culture into the uterus has been explored on a small scale, but the results have not been encouraging. The author concludes by saying that in Denmark no reliable method of controlling abortion has been discovered and that opinion on the value of vaccination is divided.

W. L. S.

[**Investigations into the Presence of *B. abortus* (Bang) in the Milk of Cattle which have Aborted following an Infection with *B. abortus* (Bang).** (Trans-title.) Klarin, E. (1931). *Skan. Vet.-tidskr.* 8. 249-269. 6 tables.]

The author, a district veterinary surgeon in Sweden, was formerly on the staff of the State Veterinary Bacteriological Institute, Stockholm, and has published several articles on research into infectious abortion in cattle. He gives a full description of his methods and summarises his results as follows:—

1.—Cattle which have aborted due to infection with *B. abortus* (Bang) frequently produce milk containing abortion bacilli.

2.—The bacilli commonly appear in the milk within one week of the abortion.

3.—Abortion bacilli occurring in the milk within one month of the abortion probably arise by autogenous infection from the uterus.

4.—The bacilli continue to appear in the milk for two months or longer, but may occasionally disappear from the milk within two to four weeks after the abortion.

5.—Milk infection occurring six or eight weeks after an abortion is probably not related to this. In such cases it is more probable that the animal has become infected again from some outside source.

Certain points relative to the hygiene of milk production are then dealt with:—

1.—Since a cow which has aborted frequently secretes the bacilli in her milk it is probable that the same applies to the milk of a cow which has carried her calf to full term but is nevertheless infected with *B. abortus*.

2.—Since in the case of a cow which has aborted, new infections frequently make their appearance and give rise to the secretion of bacilli in the milk, one is justified in assuming that such new infections may also attack other, apparently clean milking, cows in the herd.

3.—From this it follows that, in herds attacked with infectious abortion, cows can secrete abortion bacilli in their milk whether or not they have been the subjects of an actual abortion.

4.—Therefore regulations for the killing of abortion bacilli in the milk must not be restricted to individual animals in the herd, but should embrace the herd as a whole.

G. B. B.

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[**Investigations into the Agglutination Titre of the Blood Serum and the Percentage Incidence of *B. abortus* (Bang) in the Milk of Cattle affected with Contagious Abortion (Bang).** (Trans-title.) Kjellake, T. (1931.) *Skan. Vet.-tidskr.* 12. 389-404. 6 tables.]

The author summarises his investigations as follows:—

1.—The higher the agglutination titre of the

blood, the more frequently does the *B. abortus* occur in the milk.

2.—When the agglutination value is 100 or greater, *B. abortus* usually occurs in the milk (in more than 50 per cent. of the cases).

3.—When the agglutination value is 70, abortus bacilli are not infrequently found in the milk (in 19 per cent. of the cases).

4.—When the agglutination values lie between 10 to 30, it is exceptional to find bacilli in the milk (in three per cent. of cases).

5.—When the agglutination titre is above 100, *B. abortus* occurs in the milk less often with descending than with ascending agglutination values.

6.—With low agglutination titre of less than 100, in herds where infectious abortion has long been present, a failing agglutination value not infrequently points to a relapse, with abortion bacilli in the milk (in 11 per cent. of cases).

G. B. B.

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[Irrigation of the Small Intestine—A Valuable Measure in Small Animal Practice. Ullrich, K. *Prag. Archiv. f. Tiermed.* 1931. Vol. 11, No. 8.]

The author recommends the employment of intestinal irrigation for the relief of various conditions in dogs. Coprostasis, which is often associated with the presence of bone splinters, does not respond to the ordinary purgatives and in such cases irrigation per rectum is indicated. This is not only recommended for stoppages of the large intestine but also of the small intestine: for this, an enema is first given, then so much more warm water, either pure or slightly salty or alkaline, that it passes through the entire intestine and reaches the stomach, whence it is vomited. The water in a large volume is run in by gravity, the insertion tube being introduced well into the descending colon of the dog held in a head down and vertical position.

This method is also useful in the treatment of dogs for ascarid worms, which can be dislodged by the water to which the suitable vermicide or vermifuge has been added. When once in the stomach they are at once vomited. Furthermore, the method sometimes serves for the removal of foreign bodies in the thoracic œsophagus, for both the action of vomition and the flood of water tend to dislodge them.

J. T. E.

Mr. Archibald Kennedy Wilson, the newly-appointed Chief Constable of Liverpool, and whose handling of the convict mutiny at Dartmoor in his capacity as Chief Constable of Plymouth elicited admiration, was at one time a student at the University of Liverpool Veterinary School. His veterinary student days, however, were terminated by a domestic bereavement, and he joined the Cardiff City Police.

Reviews

THE HORSE-OWNER'S REFERENCE BOOK, 1932

(An Appreciation)

As intimated in the issue of the *Veterinary Record* of February 6th, a Horse-Owner's Reference Book has been issued by the National Horse Association in response to many enquiries received from horse owners and breeders for general information. It does credit to the Association and particularly to its energetic Secretary, who has gone to infinite pains in its compilation. The book, which is intended to be an annual publication, is certainly a very ready *vade-mecum* on all matters in respect to the activities of horses and ponies, and should be of much value to the horse-owner and breeder from the point of view of statistical data, record prices of horses, railway rates, particulars of Horse-breeding Societies, racing fixtures, dates of Shows, extracts from the Highway Code and Road Traffic Act, comparative transport costings, and other miscellaneous facts. It is hoped that it will prove a stimulus to a larger attendance of the general public at meetings and shows where facilities for the exhibition of horses and ponies are provided. Furthermore, it will serve the useful purpose of increasing an interest in and of attracting membership to a National movement which has for its objects the welfare of the horse and the interests of horse-owners and breeders.

At present, membership of the Association includes 13 Horse-breeding Societies, 43 Agricultural Societies, 32 Associated Societies, 10 Veterinary Societies, 9 Military Units, and 354 private subscribers. Addition to membership in all directions is very much to be desired, not only by affiliation of interested societies but by commercial firms and private subscribers. There are indications of a revival in the use of horses for agricultural and commercial purposes and for pleasure, which the new orders in respect to tariffs will tend to accentuate, particularly from the agricultural and breeding point of view. It is therefore necessary to have a strong and suitable organisation that can voice combined opinion on matters incidental to the use of animals for general purposes of agriculture and commercial undertakings. It will be of interest to recall that during the deliberations arising out of the Highway Code and the Oxford Street Traffic Enquiry, the Association was invited by Government Authorities to send delegates to give service and to express their views on points at issue. The Association is thus recognised as a useful and important body to approach when matters of transport and traffic are under consideration, and it may be taken

for granted that the interests of the horse, horse-owners and breeders are carefully watched. For these reasons the Association is worthy of support from veterinary societies and from individual members of the veterinary profession. Up to date there are 10 Veterinary Societies and 12 veterinary surgeons enumerated in membership, of whom four are on the Council of the Association. It would be of great help if more Veterinary Societies and more individual members of the veterinary profession could signify intention of enrolment. The rates of subscription are given in the Reference Book, *viz.*, affiliated societies one guinea and private subscribers half-a-guinea per annum. It may be added that the Reference Book is issued free to members, and at a cost of 1s. per copy to non-members. Copies may be obtained from The Secretary, National Horse Association, 12, Hanover Square, London, W.1.

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"THE RISE OF GREYHOUND RACING"

In an informative booklet under the above title, the National Greyhound Racing Society of Great Britain remind us that greyhound racing was first introduced into this country in 1926 at the Bellevue Racecourse in Manchester, and that so great was the degree of public interest in the new sport that by the end of 1927 over 40 courses were either established or contemplated. Independent supervision over the conduct of racing became imperative, and the National Greyhound Racing Club accordingly came into being. At the same time the racecourse managements themselves formed a federation under the style of The National Greyhound Racing Society of Great Britain, whose jurisdiction should be over administrative matters and the protection and enhancement of the interests of the sport in public life. Lord Askwith became its President and remains so.

The stewards of the Club lost no time in establishing a register of greyhounds and a system of identification which they claim to be without parallel in any other form of sport and practically flawless. They appointed a number of travelling stipendiary stewards, who visit all racecourses to make frequent inspections. The stewards themselves at headquarters hold enquiries into all reports of improper practices and publish their findings in the National Greyhound Racing Calendar.

The Society, on its side, has drawn up and administered a code of Rules for the administration of all licensed racecourses. In particular it has recently established, in the interests of the general public, the Greyhound Racing Totalisator Control Board, which supervises the operation of totalisators on all licensed racecourses, and makes frequent examinations of totalisator accounts through its appointed chartered accountants.

"Both the Society and the Club, and by the same token the Managements themselves, are at one in the belief that the success of the sport and the measure of its usefulness to the people, lies in the maintenance of the highest integrity in the conduct of the sport and in ensuring that, of all dogs, the greyhound at least shall not have a bad name."

The rise of greyhound racing is best attested by the following official return of total attendances at affiliated courses:—

1927	...	...	...	5,656,686
1928	...	...	...	13,695,275
1929	...	...	...	15,855,162
1930	...	...	...	17,119,120
1931	...	...	...	**17,906,917**

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[**International Livestock Atlas.** Bestetti and Tumminelli, S. A. Editeurs. Via Michelangelo Caetani 32, Roma (115).]

The International Institute of Agriculture in Rome is issuing under the above name a publication that merits the attention of all those who are interested in stock, be they zootechnicians or practical breeders. It sets itself a very far-reaching aim, namely, a stock-taking of the numerous breeds existing at the present time, so that the data collected may serve as a basis for further work. The object of the atlas is primarily a scientific one: a contribution to the solution of problems connected with the evolution of breeds, their adaptation to environment and the development of productive qualities.

The first volume has made its appearance as the International Cattle Atlas and so far four separate publications have been issued, dealing respectively with the breeds in Germany, Holland, Hungary and Switzerland. The greater part of the publication is composed of maps, showing the distribution of the breeds, varieties and strains as well as the density of the cattle population of the countries selected. All these maps are constructed on the same lines. To facilitate the comparison of the distribution of the different breeds, each breed or its varieties is indicated by one colour, and the density by dots. The maps are supplemented by a text giving a short description of the main geological, geographical and climatic features of the country, by a review of the agricultural activities in general and those connected with cattle raising in particular. The text then goes on to give information concerning the organisations engaged in the promotion of cattle-breeding and the assistance given by the States, either in the form of legislation, or in the form of monetary contributions, and concerning the statistics of the various products and their

importance on the world's markets. Wherever possible, texts are supplemented by diagrams giving at a glance the actual state of affairs in the countries considered.

For the collection of all this information the Institute secured the collaboration of leading experts. The text is written in three languages: in French, in English and in the language of the respective countries, *viz.*, German, Hungarian and Dutch.

The compilation is well arranged, the printing is excellent, the photographs are well selected and well reproduced and the diagrams are simple and instructive.

The International Atlas is a publication that should be well received by those who are occupied in the teaching of zootechnics, as also by the individual farmer and breeder. The latter will find it a useful and reliable source of information.

The Institute is to be congratulated on the successful beginning of a great undertaking and also on the prospects it offers of international co-operation in the field of scientific and economic study in stockbreeding.

The price of an individual publication is a very moderate one, *viz.*, 25 lire. The work is obtainable from the pulishers in Rome.

A. Theiler.

ROYAL AGRICULTURAL SOCIETY

It was announced at the recent meeting of the Royal Agricultural Society of England that a letter had been received from Sir Frederick Ponsonby stating that the King had given orders that nothing must be done in connection with His Majesty's stock farms which would interfere in any way with the exhibition of the Royal cattle and sheep at the Southampton show on July 6th.

Sir Merrik Burrell, chairman of the Veterinary Committee, said the council would soon have to consider whether or not it would support measures making it compulsory for farmers to "dress" the hides of their cattle with a preparation of derris root as a preventive of warble fly. The treatment had proved so remarkably successful and was so cheap that its compulsory application might become desirable in order to bring about complete eradication of the pest.

As showing the successful efforts of the Ministry of Agriculture to limit the incidence of foot-and-mouth disease to a minimum, Sir Merrik Burrell contrasted the 97 outbreaks in Great Britain in 1931 with the 10,526 outbreaks in France, the 24,180 in Germany, the 11,707 in Holland, and the 589 in Belgium.

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The question of unsatisfactory percentages of foals in certain cases was raised by Mr. Nichol at a meeting of the English District of the Clydesdale Horse Society at Newcastle-on-Tyne, who thought that some record of a stallion's performances should be given to selection committees. It was suggested that perhaps the stallion was not altogether to blame, and the trouble might be due to the indifferent quality and age of the mares used.

Reports

ANNUAL REPORT OF THE VETERINARY SERVICE, CYPRUS

Bearing in mind the recent disturbance in Cyprus it is pleasant to turn to the Annual Report of the Veterinary Service of that island for the year 1930 and to note the satisfactory progress therein shown. Improvements of organisation under a five years' scheme have been effected, but more is still required to be done adequately to meet the livestock needs of the Colony. The old appellation of veterinary surgeon has given place to the title of chief veterinary officer, and the service has been graded up by the new appointment of a veterinary officer, the creation of a post of veterinary inspector and the transference of temporary inspectors to the permanent staff as stock inspectors. The expenditure allotment for the year included provision for the equipment and maintenance of a veterinary laboratory at Nicosia where, in addition to routine bacteriological diagnosis, immunological processes in relation to animal diseases incidental to the island are to be studied and perfected.

The total number of animals including young stock is approximately 800,000, of which over three-quarters are sheep and goats; the value being over £1,500,000. The island is self-supporting in regard to fresh meat and most of its requirements in milk and cheese, and its export trade in animals in Egypt, Palestine, and other countries is increasing, amounting in the year under review to £81,258.

Cyprus enjoys freedom from contagious animal diseases such as foot-and-mouth disease, rinderpest, glanders, swine fever and rabies. Its insular position and the application of stringent quarantine restrictions on animals are responsible for this. Equines are submitted to two mallein tests with an interval of one month; cattle are tuberculin-tested and agglutination tests are applied for contagious abortion; goats are tested for undulant fever, poultry for bacillary white diarrhœa and dogs must undergo a quarantine period of four months. The importation of hay and straw packing is prohibited.

Enzootic diseases, however, occasion considerable loss. In 1929 this was estimated at not less than £70,000 per annum, of which sum over £20,000 per annum represented the value of animals which actually die from preventable disease.

Anthrax is by far the most serious disease of stock. There were 51 outbreaks in 1930 with 1,011 deaths. It is widely distributed, and the incidence is specially severe in sheep and goats in the hilly areas where it is at times almost impossible to ensure burial of carcasses. Annual

vaccination, carried out in the spring and early summer, is of immediate benefit: 316,028 animals were treated in 1930, of which number 189,164 were sheep and 124,384 were goats. Two hundred and thirty-nine thousand, eight hundred and seventy-nine received Pasteur's single vaccine and the remainder were treated with Onderstepoort (South Africa) single spore vaccine. The expansion of this method of dealing with the disease is well illustrated in a return showing an annual increase from 800 in 1922.

Blackquarter seems to have decreased in infected areas from the use of Blackquarter Filtrate (P.D. & Co.), 201 cattle being protected by it. Only four outbreaks were reported as against 18 in 1928.

Goat Pox, after seven years' presumed freedom, appeared in three areas and was countered by segregation of infected flocks and ovination of non-infected animals. A pseudo-pox prevails, and it is intended to investigate the affection when opportunity offers, locally it is termed "anemovloyia," and it would appear to resemble the infectious pustular dermatitis described by Glover in England and by observers in other countries.

Parasitosis.—All species of animals in Cyprus are infested with helminth parasites. Verminous bronchitis and gastro-enteritis of sheep and goats are economically important, and the value of periodic treatment of flocks with copper sulphate in 1 per cent. solution has been demonstrated. Good results from the use of carbon-tetrachloride in liver fluke in sheep have also been shown. A large percentage of equines are affected with Habronemiasis, with its resulting debility, and treatment by carbon tetrachloride in gradually increasing doses is to be tried out. The horse bot-fly, the ox warble-fly, the sheep nostril-fly, and the sheep and goat warble-fly are very prevalent. The *œstrus ovis* is the cause of serious economic loss. Sheep scab does not prevail. The beneficial results of regular dipping are being demonstrated.

Contagious Bovine Abortion.—In an agglutination survey of Nicosia and district, the Government Stock Farm was found to be still heavily infected but only three cases out of 114 animals were met with in privately-owned dairies.

Bovine Tuberculosis.—No cases of this disease were found during the year. The total absence of the disease from the Government Stock Farm in which, in 1924, 14 out of 41 animals were found to be affected is stated to be an example of the successful application of Bang's method of eradication.

Fowl Cholera.—Twenty-eight outbreaks were dealt with in the latter part of the year. Serum prepared at the Veterinary Laboratory from a local strain of *B. avisepticus*, gave good results, about 12,000 poultry being treated by it.

Fowl Pox is widespread in the Colony and no administrative control has yet been attempted. The method of vaccination by pigeon pox virus, as described by Doyle, was to be given an extensive trial in 1931, the material for the preparation of the vaccine having been obtained from the Veterinary Laboratory, Weybridge.

Avian Spirochætosis is very common. Tick-control measures, and the use of atoxyl, intramuscularly for the treatment of affected herds, usually succeed in checking mortality.

Poisoning by Barium Carbonate, used by the Agricultural Department for the destruction of rats, has been reported in donkeys and sheep.

In addition to his other duties, the Chief Veterinary Officer is the Dairy Registration Authority for the administration of the milk and Dairies and the Sale of Food (Milk) Regulations, 1926, which regulations are similar to those which apply in Great Britain. As the Inspector of Horse Breeding, he also administers the Horse Breeding Law of 1930 which provides for the licensing of all entire horses for horse breeding or jennet breeding. As is well known, the Cyprus mules are famed in the Near East, and mule-breeding is a profitable industry. A good three-year-old mule or jennet is worth from £30 to £40, and first quality four-year-olds realise up to £50 or more.

J. M.

MINERAL CONTENT OF NATURAL PASTURES

This is a progress report (of a Committee of the Economic Advisory Council), of the work being done at Naivasha, Kenya Colony, and at Garrochoran Sheep Farm, Argyllshire. The investigations at Garrochoran are of particular importance and likely to have far-reaching results. The first year's work at the farm was devoted to the collection of pre-experimental data on the nutritive value of pastures and on the condition of the sheep. The pasture, of a similar type to that of the rest of the Western Highlands, was found to be deficient in calcium, the percentage during the summer being 0·30 and in winter as low as 0·16 (dry matter basis). During the first 12 months the following important data were obtained:—

	Per cent.
Death rate in ewes	11·43
Birth rate	66·8
Death rate in lambs	34·2
Average loss in weight in hoggs (sheep under one year) ...	26
Average loss in weight in ewes ...	23·5
Lambs reared per total ewes ...	43

It is pointed out that this death rate is double that found in sheep on good lowland grazing, and that the percentage of lambs born and

reared is less than half. There was a marked fall in the level of serum calcium from October to May, with a less marked decrease in inorganic phosphorus, and there also appeared to be a progressive anæmia during the same period. The feeding of maize during the winter reduced the loss in weight, but did not materially affect the drop in serum calcium. The feeding of a calcium salt and cod liver oil tended to maintain the serum calcium at a higher level and also, to some extent, to prevent the loss in weight.

During the same period feeding experiments were carried out at the Rowett Research Institute. The sheep were fed on a ration having a similar chemical composition to that of the Garrochoran pastures, and they developed similar symptoms. The addition of calcium salts to the diet was associated with maintenance of health and vigour; the addition of cod liver oil with maintenance of health and with growth; while the addition of protein accentuated the signs of malnutrition and led to the appearance of bony deformities.

R. G. Linton.

MINERAL FEEDING

"Much has been written in recent years about the need of adequate supplies of mineral salts in the ration of cattle and other livestock," says the Agricultural Correspondent of *The Times*. "Science has shown that phosphate of lime is necessary for the construction of bone and the production of milk, and that, with heavy yielding cows, special attention is needed to ensure that their rations contain a sufficiency of minerals. By stimulating milk production and forcing early maturity in all classes of stock the breeder has interfered with Nature's provision. It has to be recognised that for modern standards of production cereals are deficient in lime, and, while good hay provides a supply in winter feeding, the quantity of hay fed nowadays is not generally sufficient to supply the cow's mineral requirements. The addition of special mineral feed is often made. Some farmers compound their own supplements from ground chalk, common salt, and steamed bone flour, but there are on the market mineral mixtures, incorporating iodine also, which are probably just as economical and more convenient for general use. The need of extra mineral feeding is most marked in mid-winter, when the herbage in the pastures is making little growth and cereals are being fed. It is possible that a deficiency of minerals may underlie a part of the trouble which farmers experience with parasitic worms in sheep and young cattle running on intensively grazed pastures. In any event it is a wise precaution to fortify such stock by providing them with a supplementary source of minerals. Fortunately in this country we do not experience "bush sickness," which in parts of New Zealand is now known to be caused by acute iron starvation, and we are spared "nakuruitie," a wasting disease of cattle, which occurs in Kenya Colony on soils of volcanic origin and which are lacking in iron. Nevertheless some pastures in this country do not provide all the mineral salts required by heavy yielding cows and early maturing stock."

N.V.M.A. Divisional Reports

MID-WEST AND SOUTH WALES V.M.A.*

ANNUAL MEETING AT BRISTOL

The Annual General Meeting of this Division was held at the Grand Hotel, Bristol, on January 15th, 1932.

There were present Messrs. R. Moore (in the chair), J. R. Hewer, B. Sayer, L. St. Bel Golledge, S. V. Golledge, C. R. Golledge, W. A. Austin, J. J. Aveston, P. M. Storrar, J. E. S. Powell, J. Howard Jones, G. H. Thomas, E. C. Bovett, T. J. Margarson, C. J. Pugh, Edwin Sayer, W. A. Jelbart, W. R. Watson, E. E. Seldon, F. C. Hobbs, J. R. Barker, L. A. Watson, R. J. W. Hall, B. H. Gale, D. W. Menzies, G. E. Henson and C. E. Perry, Hon. Secretary. The visitors present were Lieut.-Colonel P. J. Simpson (President, N.V.M.A.), Captain A. Houston (Gloucester), Captain J. G. Gallie (Bristol), Messrs. J. Brand (Bristol) and A. J. Baxter (Lechlade), Captain F. J. Eardley (Gloucester) and Captain T. Fox (Bristol). Apologies for absence were received from Mr. W. D. Rees, Mr. W. T. Edwards, Dr. Colston Williams, Messrs. N. Swanston, H. C. D. Golledge, P. S. Morgan and Professor F. Hobday.

Correspondence

(1) From Mr. H. J. Ede in reference to a veterinary radiographer in the district.

After discussion it was decided that a suitable reply be sent to Mr. Ede.

(2) From the Secretary of the Victoria Veterinary Benevolent Fund, acknowledging the receipt of £3 15s. 6d., being the amount collected in the Division's box for year 1931.

(3) From the N.V.M.A. in reference to free treatment of the sick animals of poor people.

(4) From the Secretary of the Royal College of Veterinary Surgeons in the same connection.

(5) From the R.S.P.C.A. concerning the provision of accommodation for the free treatment of the sick animals of poor people.

Treasurer's Report

The Hon. Treasurer (Major G. E. Henson) presented his balance sheet, showing a balance in hand of £66. It was proposed by Mr. Moore, seconded by Mr. Hewer and carried, that the Treasurer's report be adopted.

Council's Recommendations

The Council recommended that £5 be sent to the Victoria Veterinary Benevolent Fund, being interest from the Adams Memorial Fund; also that a £5 5s. donation be sent to the V.V.B.F. from the Division.

Mr. Hall proposed and Mr. Sayer seconded that the Divisional £5 5s. be sent on condition

*Received for publication February 8th,

that it be decreased or increased yearly according to the funds of the Association. This was agreed.

SECRETARY'S REPORT

Mr. C. E. PERRY (Hon. Secretary) presented the following report, which was adopted:—

"The present membership is 84, including nine Honorary members, this being an increase of five during the year. Ten new members have joined the Association and five have resigned—three owing to removal from the area. During the year we have held the Annual Meeting, three Quarterly Meetings and three Council Meetings. The average attendance at General Meetings has been 26 and at Council Meetings 11 (out of 17 members of Council).

"At the Annual Meeting Professor Wright gave us a veterinary film display which was very much appreciated and we are indebted to Professor Hobday and the Royal Veterinary College for sending down the apparatus and films. We are also indebted to Professor McCunn for coming down to our Bath meeting and giving us a surgical demonstration. Our thanks are also due to one of our own members, Mr. Margarson, of Stroud, for his paper on 'Some Conditions met with after Parturition,' which opened up a most enthusiastic discussion. Last, and not least, through the influence of our President, we were invited to Westhide, Hereford, by Mr. H. R. Jenkins, to inspect his herd of Hereford cattle and to luncheon, when a most enjoyable day was spent by those members present."

ELECTION OF OFFICERS FOR 1932

President.—Captain J. R. Hewer, O.B.E.

Vice-Presidents.—Messrs. Barker, Henson, Powell and Moore.

Treasurer.—Major G. E. Henson.

Secretary.—Mr. C. E. Perry.

Auditors.—Messrs. Watson and Powell.

Representatives to Council, N.V.M.A.—Messrs. Coleman, Watson, the President and (*ex-officio*) the Secretary.

Members of Council.—The following members were re-elected:—Messrs. Aveston, Barker, Bovett, Coleman, Howard Jones, Hall Masheter, Powell, Rees, Scott, Watson, and Messrs. C. J. Pugh and C. R. Golledge were elected in place of Messrs. Hall and Sayer (resigned).

Free Treatment of the Sick Animals of the Poor.—The meeting went into committee to consider this matter, discussion upon which was initiated by Lieut.-Colonel P. J. Simpson (President, N.V.M.A.), who explained the schemes put forward by the "National."

Letters were read from the local branch of the R.S.P.C.A., from the "National," and from the Secretary of the Royal College of Veterinary Surgeons in reference to the schemes. After discussion, the following resolution was proposed by the PRESIDENT, seconded, and carried:—"That this Division supports the schemes proposed by the N.V.M.A., the details to be arranged by the local committees."

On the proposition of the PRESIDENT, Colonel Simpson was heartily thanked for the trouble he had taken in journeying to Bristol for the purpose of laying before the Division the proposals made in connection with the treatment of the sick animals of poor persons, and which intention he had so effectively fulfilled.

C. E. PERRY, *Hon. Secretary.*

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NORTH OF SCOTLAND DIVISION

PRESIDENT'S ADDRESS AT ABERDEEN

The half-yearly meeting of the Division was held in Marischal College, Aberdeen, on Saturday, January 30th, 1932.

Mr. A. Sievwright, Tarland, the President, occupied the chair, and there were also present Messrs. D. Cumming, J. C. Grant, H. McVean, D. Crabb, A. Niven, D. Clerk, A. Macfarlane, J. Anderson, J. C. Mitchell, J. Lyon, W. Macpherson, H. W. Robson, R. E. Drennan, G. Moir, G. Howie and J. McAllan, Hon. Secretary.

The minutes of last meeting were taken as read as they appeared in the *Veterinary Record*, and were approved and signed.

The President welcomed both Mr. Cumming, of Culter, on his return to the meetings after his recovery from serious illness, and Mr. Wallace, an old member of the Division home on leave from the Federated Malay States.

Correspondence.—(1) From Mr. A. B. Hendry, now of Nairn, tendering his resignation from the Division. This was accepted with regret.

(2) From the General Secretary, National Veterinary Medical Association, dated October 12th, enclosing a resolution from the Midland Counties Division with reference to the advisability of Johne's disease being made notifiable. After discussion, the Secretary was instructed to inform the General Secretary that the North of Scotland Division is of opinion that the time is ripe for efforts being made to get Johne's disease made notifiable.

New Member.—Mr. NIVEN proposed and Mr. DRENNAN seconded that Mr. McVean, Junr., of Craigellachie, be elected a member of the Division. His election was most heartily agreed to by the members present.

ELECTION OF OFFICE BEARERS

President.—Mr. John Lyon, Banff, proposed by the PRESIDENT and seconded by Mr. ANDERSON.

Vice-Presidents.—Senior: Mr. William Anderson, Keith; Junior: Mr. J. C. Grant, Aberdeen.

Secretary and Treasurer.—Mr. J. McAllan (re-elected).

Council.—The members of Council were re-elected with the addition of Mr. A. Niven, Inverurie, in place of Mr. J. C. Grant.

*Received for publication February 3rd, 1932.

PRESIDENT'S ADDRESS

The President, Mr. Sievwright, then delivered his Presidential Address in the following terms:—

"I would again thank you for the honour you have conferred on me by electing me President of this Division. I highly appreciate the compliment, although I feel there are others much more fitted to fill the position than myself. I can only fulfil the duties to the best of my ability.

"I feel we ought to congratulate Mr. McAllan and Mr. Howie on their very interesting paper on 'Milk Hygiene,' at the recent 'National' Congress at Norwich, which was so well received and called forth a good discussion. The presenting of such a paper is not only an honour to the writers, but it is an honour to this Division to be represented so prominently.

"We appreciate very much the untiring efforts of our Secretary to make the meetings the success which they are, and it is the duty of the members to give him all the support they can by attending the meetings regularly.

"Originality in a presidential address is very difficult of attainment, and I must forego any desire to strike new notes in mine.

"As most of us practise with some idea of not being worse off financially at the end of the year than at the beginning, we may be forgiven for wondering what the future holds in store for us in these difficult times of agricultural depression, and the dispersion of so many valuable pedigree herds. It has been said that when one door shuts another one opens, but it is debatable whether the new door always opens on to a pitch as desirable as that upon which the other one closed.

"On reviewing the general prospects of the profession since the war, one is at once impressed with the increase in public and foreign appointments. The Ministry of Agriculture and Fisheries have greatly increased the numbers of their permanent staff of Veterinary Inspectors; City and County Inspectors are now to be found in most counties, both in England and Scotland, whose duties are entirely connected with public health administration. These appointments are a means of raising the status of the profession as a whole, and thanks are due to the untiring efforts of our National Association in striving to get the salaries of these posts on sound remunerative bases.

"Good work is being done by many of our graduates in the colonies and abroad, both in the laboratory and in the field, in the control and eradication of infectious and contagious diseases, but unfortunately, appointments in the Colonial Veterinary Services have been limited at present owing to the world-wide financial crisis. Yet, with time, conditions will improve and these services abroad may yet be the healthiest outlook for the young graduate. A course of study has now been instituted for a diploma in Tropical Veterinary Medicine—an indication that we are moving with the times.

"Research work at home is being encouraged and recognised as essential to the farming community, and as a result, several Research Institutes have come into prominence during the last few years, each of which is fully occupied with the problems connected with animal welfare, although lack of funds does not permit of their fullest possible progress.

"I am sure the practitioners present would welcome the finding of the cause of that most heartless disease, grass sickness. We all long for the discovery of prophylactic measures against it. Among other diseases on which we would welcome more knowledge are mastitis and sterility in bovines due to abortion. We have to thank the research worker for the many biological products already on the market for the prevention and cure of disease and also for many standardised drugs, the action of which can be definitely relied upon. We all recognise the prophylactic value of tetanus antitoxin serum, and antistreptococcus serum, blackleg and anti-abortion vaccines, etc., and more recently we have had to feel grateful for the Laidlaw and Dunkin canine distemper inoculation products, which will become more generally used as their value is recognised by the public.

"While specialisation, kept going by a team of highly trained men, is essential to progress, yet numerically the general practitioner still holds the field. Is the general practitioner receiving his just reward at present? Two facts come to mind. Firstly, there is a natural desire on the part of young graduates to shirk the drudgery of general practice with its uncertain income and hours of service. Secondly, and with all due respect to the whole-time men, I do not think the general practitioner is receiving the support from them which is decidedly his due. His work is being encroached upon in various ways by the whole-time men, and should Advisory Officers be established throughout the country the incomes of general practitioners will become more insecure than ever. This is probably a rather pessimistic view to take, since the practitioner of to-day has an ever increasing variety of patients demanding his attention, poultry and fur-bearing animals taking prominent positions in this country.

"It is only by attending meetings such as this, and by reading the current veterinary literature, that it is possible to keep abreast with up-to-date knowledge and so avoid what is so easy—getting into a rut. Despite all the difficulties with which one has to contend, it will be a long time before the farmer can do without his practical adviser, the General Practitioner, but with the approach of a five years' curriculum for our students one may be forgiven for wondering whether a whole-time State service will not follow automatically, with some kind of health insurance scheme for our larger animals.

"I need not take up more of your time, but would close by tendering you again my best thanks for the honour you have conferred on me in electing me President of the Division."

On the call of Mr. James Anderson, the President was accorded a most hearty vote of thanks for his address.

Next Meeting.—The arranging of the programme for the next meeting was left in the hands of the Secretary with the suggestion that someone might be asked to give a paper on parasites.

Finance.—The Secretary put the financial position of the Division before the members. It was agreed that this was most satisfactory.

Clinical Discussion.—The rest of the time available was spent in discussing interesting cases brought up by members. These cases were very varied and the discussion on them both keen and interesting. To the few members who did not take part in the discussion it was forcibly brought home how true it is that if members would only write up their interesting cases, even one a year, the *Record* would not lack for an abundance of interesting and valuable material.

The meeting closed with a very hearty vote of thanks to the retiring President, Mr. Sievwright.

J. McAllan, *Hon. Secretary.*

ANTI-RACHITIC MILK

Hess, Lewis, MacLeod and Thomas (*Journal of the American Medical Association,* August 8th, 1931) report on the use of milk from cows that have been fed irradiated yeast and ergosterol. As a result of this study it was found that milk of high anti-rachitic potency was produced and that irradiated yeast induced a more potent milk than viosterol fed to cows.

They state that: "The outstanding advantage of this method of anti-rachitic therapy is that it functions automatically; the specific factor is incorporated in the diet of the infant, relieving the physician of dependence on the co-operation of the mother."

At the presentation of this paper at the Philadelphia meeting of the American Medical Association, it was pointed out that danger lurked in production of this type of milk. "Dairies that are commercially inclined and journals that are ready to receive their advertisements," according to Dr. Harry Lowenburg, Philadelphia, "would be advertising irradiated milk and the mother will feel that all she has to do to prevent rickets is to buy this new kind of milk."

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For some years Mr. J. P. Fletcher's British Friesian cow, Osmanton Jenny, has had the distinction of being the only cow in this country with five consecutive 2,000-gallon yields. Now another cow of the same breed has achieved a similar record. Lund Juliana, bred and developed by Mr. C. W. H. Glossop, M.P., of Bramwith, Doncaster, has calved six times and has already produced over 11,000 gallons of milk, her respective yields being 1,004, 2,119, 2,080, 2,198, 2,106 and 2,038 gallons. After being in milk for nearly 300 days she is still giving almost four gallons daily.

LADIES' VETERINARY BENEVOLENT GUILD

SUCCESSFUL INAUGURAL MEETING

A well-attended meeting of the Ladies' Veterinary Benevolent Guild was held at 10, Red Lion Square, W.C.1, on Thursday, February 11th, when there were present:—Mrs. B. Dunkin, Mrs. A. H. Jurgensen, Mrs. B. Jones, Mrs. K. King, Mrs. T. Leyshon, Mrs. L. Macqueen, Mrs. A. Male, Mrs. J. Minett, Mrs. M. Simpson, Mrs. J. Willett, Mrs. M. Willett, Mrs. E. M. Wooldridge and Mrs. E. Wright, together with Lieut.-Colonel P. J. Simpson (acting Secretary) and Dr. Fred Bullock.

Lieut.-Colonel P. J. Simpson, who took the chair, opened the proceedings by explaining that the primary object, indeed the only object, of the Guild was to raise money by means of dances, fêtes, tournaments, bridge parties and in other ways which might occur to members, which money would be handed over to the Victoria Veterinary Benevolent Fund for the relief of aged and necessitous widows or female relations of members of the Royal College of Veterinary Surgeons.

After reading letters of apology for absence from Lady Jackson, Mrs. Brittlebank, Mrs. MacGregor and Mrs. Townson, Colonel Simpson went on to report that at that date 93 ladies had enrolled, and that entrance fees, subscriptions and donations amounted to £20 11s. 6d. He mentioned that these members were scattered all over the British Isles, and that, while every one of them had evinced the greatest interest, he would like to say that four in particular had been very energetic, namely, Mrs. King, Mrs. Male, Mrs. Wooldridge and Mrs. Kelly.

A discussion on the Rules governing the Guild followed, and it was finally agreed to present the following suggested rules to the first General Meeting:—

Suggested Rules

1.—The Guild shall be called "The Ladies' Veterinary Benevolent Guild."

2.—The affairs of the Guild shall be governed by a President, six Vice-Presidents, an Hon. Secretary, and an Hon. Treasurer, who shall be elected at the Annual Meeting, together with a Council nominated by the Branches (one to every 50 members of the Branch), six of whom shall form a quorum.

3.—Membership is open to any lady interested in the scheme, irrespective of direct or indirect connection with the Veterinary Profession.

4.—The subscription shall be an annual one of two shillings and sixpence, together with an entrance fee of one shilling on election.

5.—Branches of the Guild to be established in:—(1) North of England; (2) South of England; (3) London, including Middlesex; (4) Midlands; (5) East of England; (6) Wales; (7) Scotland; (8) Irish Free State; (9) Northern Ireland. (*See appendix*).

6.—Other Branches may be formed in British Colonies or Dependencies if approved by the General Council, and if formed will be afforded the same privileges as the other Branches.

7.—Branches will be managed by a Chairman, a Committee and Secretary elected by the members of the Guild residing in the Branch area at the annual meeting of the Branch.

8.—Branch Secretaries will be responsible for the return of Branch (and Divisional) reports and subscriptions, etc., to the General Secretary and Treasurer.

9.—Divisions shall be managed by a Chairman, a Secretary and a Committee of five, the Chairman and Secretary being *ex-officio* members of the Committee. Three to form a *quorum*.

10.—The Secretary to be responsible for the collection of the subscriptions and handing over to the Branch Secretary of all monies collected by the Division.

11.—Members of the Guild undertake, at least once yearly, either singly or collectively, to organise or help to organise, any fête, sale of work, entertainment, tournament, or any function within the boundaries of their Division or Branch, that has for its object the raising of money for the Guild. Such money to be handed over to the Victoria Veterinary Benevolent Fund for the relief of necessitous widows or female relatives of members of the Royal College of Veterinary Surgeons.

12.—No money of the Guild, its Branches or Divisions, to be used for financing such undertakings.

13.—All money so raised, including subscriptions, to be in the hands of the General Treasurer by June 1st of each year, and shall be passed to the Secretary of the Victoria Veterinary Benevolent Fund not later than September 1st of each year.

14.—The Annual Meeting of the Guild shall be held at the same place and during the week that the National Veterinary Medical Association holds its Congress, provided that date shall fall in August; otherwise the meeting shall be held in the month of August at a time and place fixed at the previous annual meeting.

15.—At the Annual General Meeting the Officers for the ensuing year shall be elected, the place of next meeting decided on, and the annual report and statement of accounts presented, and matters discussed, including alteration or addition to the rules, provided that notice of motion shall have been given to the General Secretary in writing not less than one month prior to the date of the meeting, and that such motion shall appear on the agenda calling the meeting.

16.—The expenses of calling the Annual Meeting shall be defrayed from the General Funds of the Guild.

APPENDIX.

Proposed Areas of Branches.

1.—**North of England.**—Northumberland, Cumberland, Durham, Cheshire, Westmorland, Lancashire, Yorkshire.
2.—**South of England.**—Cornwall, Devon, Somerset, Dorset, Wiltshire, Hampshire, Isle of Wight, Surrey, Sussex, Kent.
3.—**London,** including Middlesex.
4.—**Midlands.**—Berkshire, Buckinghamshire, Gloucester, Oxfordshire, Northamptonshire, Leicestershire, Warwickshire, Worcestershire, Staffordshire, Derbyshire, Nottinghamshire, Shropshire, Herefordshire.
5.—**East of England.**—Essex, Suffolk, Norfolk, Lincolnshire, Rutland, Isle of Ely, Cambridge, Huntingdonshire, Bedfordshire, Hertfordshire.
6.—**Wales.**
7.—**Scotland.**
8.—**Irish Free State.**
9.—**Northern Ireland.**

With regard to Rule 5 (Establishment of Branches), the Acting Secretary drew attention to the noteworthy efforts of certain ladies in the North of England who had materially assisted the Victoria Veterinary Benevolent Fund, and pointed out that it was not the intention of the Guild to supersede them, nor in any way to interfere with their good work.

APPOINTMENT OF OFFICE-BEARERS

Attention was then directed to the appointment of Officers, and subject to receiving their consent, where necessary, the following were appointed to hold office until the first General Meeting:—

President.—Mrs. M. Simpson.

Vice-Presidents.—England, Mrs. Male, Mrs. Wooldridge; Wales, Mrs. Brittlebank; Scotland, Mrs. McGregor; Northern Ireland, Mrs. H. C. I. Kelly; Irish Free State, Mrs. Dolan.

Hon. Secretary.—Mrs. Jurgensen, 29, Avenue House, St. John's Wood, London, N.W.8.

Hon. Treasurer.—Mrs. M. Willett, Eton Cottage, Gresham Road, Staines, Middlesex.

It was agreed that these ladies should form the Executive Committee for the time being, and that in their hands should be left the arrangements for calling the first Annual General Meeting, which is to take place on Thursday, August 11th, at 11 a.m. (during the N.V.M.A. Congress week).

Amid acclamation, Mrs. Male proposed a vote of thanks to Colonel Simpson for all that he had done for the Guild on that day and for weeks previously.

Dr. Bullock, in seconding, instanced heart-rending cases of distress which showed not only the very real need of financial assistance but of womanly sympathy, tact and intuition—qualities so helpful in the lightening of the burdens of the unfortunate.

Colonel Simpson, in the course of his response, wished the Guild every success, and placed himself unreservedly at its disposal.

PAY OF CIVIL SERVANTS ABROAD

Following the approach made by the staff side of the National Whitley Council to the Financial Secretary to the Treasury with reference to the effect of the British departure from the gold standard on the pay of Civil Servants serving in countries still remaining on the gold standard, it is now announced that as a purely temporary measure *ex gratia* adjustments will be made so as to provide that 75 per cent. of remuneration up to £300 a year (£200 a year for Civil Servants in South Africa in receipt of colonial allowances in South African currency) and 50 per cent. of any balance will be payable in local currency instead of sterling. Up till now Civil Servants employed abroad have received their pay and allowances in sterling, with the result that those in "gold standard" countries have suffered a marked decrease in purchasing power as a result of the British departure from the gold standard.

* * * * *

"A sound and healthy meat supply can only be obtained by a rigid and thorough system of inspection. This is only possible when private slaughter-houses are abolished and the slaughter of animals concentrated in an abattoir designed with that end in view. In this direction and in the support of veterinary training we are far behind the leading Continental nations where all meat is, by law, killed in public abattoirs."—Mr. H. Williams, designer of Sheffield's new abattoir.

N.V.M.A. Congress at Folkestone, August 8th-13th, 1932

PROVISIONAL PROGRAMME

The following is the Provisional Programme of the Association's Congress, to be held at Folkestone from August 8th to August 13th:—

MONDAY, 8TH, *10 a.m.*—Opening of the Congress by His Worship the Mayor of Folkestone.
MONDAY, 8TH, *11 a.m.*—Paper: "Recent Advances in Therapeutics."
MONDAY, 8TH, *Evening.*—Reception by President.
TUESDAY, 9TH. 9.30 *a.m.*—Paper: "The Relation of Meat and Meat Products to Bacterial Food Poisoning in Man."
TUESDAY, 9TH, *11.30 a.m.*—Paper: "Anærobic Infections of Sheep as seen in the Romney Marsh."
WEDNESDAY, 10TH, *9.30 a.m.*—Paper: "A Comparison of the Systems of Meat and Milk Inspection in this Country and Abroad.
WEDNESDAY, 10TH, *11.30 a.m.*—Paper: "The Diagnosis of Gastric and Intestinal Diseases of the Dog and Cat."
WEDNESDAY, 10TH, *2.30 p.m.*—Council Meeting.
WEDNESDAY, 10TH, *3.30 p.m.*—Annual General Meeting.
WEDNESDAY, 10TH, *Evening.*—Annual Banquet.
THURSDAY, 11TH. —Demonstrations.
THURSDAY, 11TH, *11 a.m.*—First Annual General Meeting of Ladies' Veterinary Benevolent Guild.
FRIDAY, 12TH, *9.30 a.m.*—Paper: "Clinical Examination of the Cow's Udder."
FRIDAY, 12TH, *11.30 a.m.*—Paper: "Contagious Abortion: (*a*) vaccination; (*b*) its relation to Undulant Fever."
SATURDAY, 13TH, *9.30 a.m.*—Closing Meeting.

SUBJECTS FOR PAPERS

PUBLIC HEALTH SECTION

(*President*: *Arthur Gofton, Esq.*, F.R.C.V.S.)
(*Vice-President*: *Major Brennan De Vine*, M.C. F.R.C.V.S., D.V.S.M.)
(*Recording Secretary*: *P. F. Dolan, Esq.*, M.R.C.V.S., D.V.S.M.)

1.—"The Relation of Meat and Meat Products to Bacterial Food Poisoning in Man."
By R. Lovell, M.Sc., M.R.C.V.S., D.V.S.M., London.
Opener: Professor J. F. Craig, M.A., M.R.C.V.S., Dublin.

2.—"A Comparison of the Systems of Meat and Milk Inspection in this Country and Abroad."
By Major D. S. Rabagliati, B.Sc., F.R.C.V.S., D.V.S.M., Wakefield, and Lieut.-Colonel T. Dunlop Young, M.R.C.V.S., D.V.S.M., London.
Opener: Lieut.-Colonel J. A. Dixon, T.D., M.R.C.V.S., Leeds.

VETERINARY MEDICINE AND SURGERY SECTION

(*President*: *Professor James Macqueen*, F.R.C.V.S.)
(*Vice-President*: *Professor Geo. H. Wooldridge*, F.R.C.V.S., M.R.I.A.)
(*Recording Secretary*: *Captain O. V. Gunning*, D.V.M., M.R.C.V.S.)

1.—"Recent Advances in Therapeutics."
By Arnold Spicer, F.R.C.V.S., Oxted.
Opener: Dr. J. Russell Greig, M.R.C.V.S., Edinburgh.

2.—"The Diagnosis of Gastric and Intestinal Diseases of the Dog and Cat."
By Professor J. G. Wright, F.R.C.V.S., London.
Openers: Major Frank Chambers, F.R.C.V.S., Wolverhampton; Major Hamilton Kirk, M.R.C.V.S., London.

3.—"Clinical Examination of the Cow's Udder."
By Capt. R. Simpson, F.R.C.V.S., D.V.S.M., Carlisle.
Opener: Thomas Wilson, M.R.C.V.S., Nantwich.

EXPERIMENTAL PATHOLOGY SECTION

(*President*: *Professor J. Basil Buxton*, M.A., F.R.C.V.S., D.V.H.)
(*Vice-President*: *Professor S. H. Gaiger*, F.R.C.V.S.)
(*Recording Secretary*: *Dr. W. R. Wooldridge*, M.Sc., M.R.C.V.S.)

1.—"Anærobic Infections of Sheep as seen in the Romney Marsh."
By A. D. McEwen, B.Sc., M.R.C.V.S., Wye.
Opener: Dr. R. F. Montgomerie, B.Sc., F.R.C.V.S., Bangor.

2.—"Contagious Abortion: (*a*) vaccination; (*b*) its relation to Undulant Fever."
By Dr. W. H. Andrews, M.R.C.V.S., Weybridge.
Openers: Dr. F. C. Minett, M.R.C.V.S., London; Professor G. S. Wilson, London.

LIST OF HOTELS

UPPER TOWN:

Adelphi, 2, *Augusta Gardens, near the Leas*, £4 4s. to £5 5s. per week, or 12s. 6d. to 15s. 6d. per day.
Avondale, 19, *Clifton Gardens*, £3 13s. 6d. to £5 5s. per week, or 10s. 6d. to 14s. 6d. per day.
Bannockburn, 27, *Castle Hill Avenue*, from 2½ guineas weekly.
Bath Hotel, *The Leas*, from 3 guineas weekly.
Belvedere, 12, *Trinity Crescent, en pension*, £4 4s. per week, or 14s. 6d. per day.
Blount's (Private), 28, *Clifton Gardens*, from £4 4s. per week.
Bouverie House, 25-26, *Bouverie Square, en pension*, 3-3½ guineas per week.
Bristol, 2-3, *The Leas*, from £4 4s. per week, or from 12s. 6d. per day.
Burlington, *The Leas*, from 7 guineas weekly.
Cambridge (Private), 24, *Clifton Gardens*, from £4 4s. per week.
Casbon House, 14, *Castle Hill Avenue*, from £3 3s. weekly.
Clifton, *The Leas*, £5 15s. 6d. to £10 10s. per week, or 16s. 6d. to 30s. per day.
Comans, *Castle Hill Avenue*, from £4 4s. to £6 6s. per week, or from 13s. 6d. per day.
Carlton (Private), 18-19, *The Leas, en pension*, from 10s. 6d. to 19s. 6d. per day.
Flordon House (Private), 10, *West Terrace, en pension*, from £3 13s. 6d. per week.
Garden House, 142, *Sandgate Road, near the Leas*, from £5 15s. 6d. per week or from 16s. 6d. to 25s. per day.
Glendower (Private), 29, *Clifton Gardens*, £3 13s. 6d. to £4 14s. 6d. per week.
Grand, *West Leas* (licensed), from 25s. per day.
Gresham (Private), 18, *Clifton Crescent*, £3 3s. to £5 5s. per week.
Highcliffe (Private), 22-23, *Clifton Gardens*, from £3 3s. per week, or 10s. per day.
Holderness (Private), *Clifton Crescent*, from £3 3s. per week or 10s. 6d. per day.
Hurlingham, 18, *Clifton Gardens*, £3 3s. to £5 5s. per week.
Kildare (Private), 17, *Clifton Gardens*, £3 3s. to £5 5s. per week, or from 10s. 6d. per day.
Langhorne, *The Leas, en pension*, from £4 4s. per week.
Lincoln (Private), 20-24, *Bouverie Square, en pension*, from £3 3s. per week.
Leas (licensed), *Clifton Gardens, The Leas*, 5½ to 7½ guineas per week.
The Longford (Private), 7, *The Leas*, 4 to 5 guineas per week.
Lyndhurst, *Clifton Gardens, The Leas*, from £7 7s. per week.
Majestic (licensed), *Castle Hill Avenue*, from 17s. 6d. per day for not less than 5 days.
May-Fair (Private), 9-10, *The Leas*, from £3 13s. 6d. per week, *en pension*.
Montclair (Private), 21, *Clifton Gardens*, from £3 3s. per week.
Moore's, *The Leas*, from £3 13s. 6d. per week.
Norfolk (licensed), 10-12, *Langhorne Gardens*, 5 and 5½ guineas per week.
Queen's (licensed), *Sandgate Road*, from 15s. per day for not less than 3 days.
Rhodesia, *The Leas*, from 2½ guineas weekly.
Salisbury (Private), *Langhorne Gardens, The Leas*, £5 5s. to £7 7s. per week, or from 15s. per day.
Skelmersdale, 22-24, *The Leas*, 4 to 6 guineas per week.
St. Genny's (Private), 26, *Clifton Gardens*, from £3 13s. 6d. per week.
Torrington (Private), 14, *Bouverie Square*, from £3 3s. per week.
Trevarra (Private), 30, *Bouverie Road West, en pension*, from £3 3s. per week.
Wampach (licensed), 31-37, *Castle Hill Avenue*, from 17s. 6d. per day.
White House (Private), 5, *Clifton Gardens*, from £3 13s. 6d. per week.
Windsor House, *Langhorne Gardens*, from 3½ guineas.

Board-Residence:

"Twyford," 4, *West Terrace, The Leas*, 3-5 guineas weekly.
York House, 6, *West Terrace, The Leas*, from £3 3s. weekly.

LOWER SEA-FRONT:

Beach House, 10, *Marine Parade*, from £3 3s. per week.
Devonshire House, 8-9, *Marine Parade*, from £3 13s. 6d. per week.
Pier, 1-2, *Marine Crescent*, from 2½ guineas weekly.
Royal Pavilion (licensed), £6 6s. to £8 8s. per week, or from 18s. per day.
Victoria (Private), 13-14, *Marine Crescent*, from £3 3s. weekly.

Board-Residence:

Barrelle House, 14-15, *Marine Parade*, from 2½ guineas weekly.
Chatsworth, 4-5, *Marine Crescent*, from 6s. per day.
Crescent House, 11, *Marine Crescent*, from £3 3s. weekly.
Stoneleigh, 12, *Marine Crescent*, from 3 to 3½ guineas weekly.

Sandgate

Royal Kent (licensed), from £6 6s. per week.

Hythe

Imperial, from 8 guineas weekly.
Sutherland House (licensed) from 3½ guineas per week.

As Folkestone is an extremely popular South Coast holiday resort, application for rooms should be made forthwith to ensure accommodation.

All the hotels mentioned above will gladly send further particulars upon request.

H.M. STATIONERY OFFICE PUBLICATIONS

The undermentioned have been published recently. Copies can be purchased through any bookseller, or directly from H.M. Stationery Office, at the following addresses:—London: Adastral House, Kingsway, W.C.2, and 28, Abingdon Street, S.W.1; Cardiff: 1, St. Andrew's Crescent; Manchester: York Street; Edinburgh: 120, George Street.

	Price Net. s.	d.	*Post Free.* s.	d.
HOUSE OF LORDS PAPERS AND BILLS.				
(22) Destructive Imported Animals Bill. (H.L.) To make provision for prohibiting or controlling the importation into and the keeping within Great Britain of destructive non-indigenous animals, for exterminating any such animals which may be at large, and for purposes connected with the matters aforesaid ...	0	2	0	2½
(28) Veterinary Surgeons (Irish Free State Agreement). (H. L.)	0	2	0	2½
WAR OFFICE:—				
Horsemastership, Equitation and Driving, Manual, 1929. Amendments No. 1, January, 1932. (57-9999.)	0	1	0	1½

IN PARLIAMENT

VETERINARY SURGEONS (IRISH FREE STATE AGREEMENT) BILL THROUGH THE LORDS.

In the House of Lords on Tuesday of last week, the Veterinary Surgeons (Irish Free State Agreement) Bill to confirm and give effect to an agreement with respect to the registration and control of veterinary surgeons in Ireland, passed through Committee without amendment. On the Thursday (February 18th) the Bill was read a third time and passed.

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DANGEROUS DRUGS BILL

In the House of Lords on February 18th the Earl of Lucan, Captain of the Gentlemen at Arms, in moving the second reading of the Dangerous Drugs Bill, said that its object was to amend the Dangerous Drugs Acts, 1920 to 1925, so far as was necessary to enable the Government to ratify the international convention signed at Geneva in the summer of last year, which was designed to limit the manufacture and to regulate the distribution of narcotic drugs. An extensive illicit traffic in such drugs as morphine, heroin, and cocaine was being carried on in many parts of the world, and that traffic was facilitated by the fact that the drugs were being produced in quantities largely in excess of the medical and scientific requirements of the world. The Opium Advisory Committee of the League of Nations had advocated the limitation of the manufacture of such drugs, and considered that the most effective step towards suppressing the illicit traffic was to prohibit the production of quantities beyond those which were required for medical and scientific purposes. Such limitation could only be brought about by international agreement.

The Bill was read a second time.

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The following questions and answers have been recorded in the House recently:—

TUBERCULOSIS (SPAHLINGER TREATMENT)

Mr. Hammersley asked the Minister of Health what reports he has received from his officials on the publication by Spahlinger of his formula for the treatment of tuberculosis?

Sir H. Young: I have received from M. Spahlinger a copy of his statement as issued to the press, and I am considering it. I have also sent copies of the statement to the Medical Research Council and other competent research bodies for their observations.

On a subsequent occasion Mr. Hammersley asked the Minister of Health when he expects to receive the observations of the Medical Research Council and other competent research bodies on the statement by Mr. Spahlinger containing a formula for the treatment of tuberculosis?

Sir H. Young: I am unable at present to say when it is likely that these observations will be received.

Mr. Hammersley: In view of the overwhelming importance of this matter to a very large number of people, will the right hon. Gentleman bear in mind the advisability of making a statement as early as possible?

Sir H. Young: I can assure my hon. Friend that the public interest taken in the matter will not be lost sight of.

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PUBLIC HEALTH (IMPORTED MEAT)

Lord Scone asked the Minister of Health if he will consider the advisability of prohibiting the importation of boneless meat, in view of the difficulty of detecting unsoundness or disease in such meat?

The Parliamentary Secretary to the Ministry of Health (Mr. Ernest Brown): The importation of boneless meat which affords insufficient means of identification with definite parts of a carcass is prohibited under the Imported Food Regulations of 1925. My right hon. Friend is now considering the amendment of these Regulations so as to require a recognised official certificate of the country of origin with all imports of fresh meat less than the whole carcass.

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MEAT IMPORTS

Mr. Turton asked the President of the Board of Trade what quantities of beef and mutton were imported into this country from the British Empire and foreign countries, respectively, in each of the years 1913, 1930 and 1931.

Mr. Hore-Belisha: As the answer involves a number of figures I will, with my hon. Friend's permission, circulate it in the Official Report.

Following is the answer:

The following table shows the total quantities of beef, mutton and lamb of all kinds imported into the United Kingdom during the years 1913, 1930 and 1931, distinguishing the imports consigned from British and foreign countries, respectively.

Description.	Imports into the United Kingdom consigned from British Countries.			Foreign Countries.		
	1913.	1930.	1931.	1913.	1930.	1931.
	In Thousand cwts.					
Beef	1,911	1,198	1,573	7,990	11,600	11,567
Lamb	3,924	1,462	1,655	1,492	1,098	725
Mutton		2,711	3,441		1,279	1,478

Note.—(1) The above figures for 1913 relate to the imports into the British Isles as a whole, while the figures for 1930 and 1931 relate to imports into Great Britain and Northern Ireland only. (2) The figures for 1931 are provisional.

HOME FED MEAT

Mr. Turton asked the Minister of Agriculture what quantities of beef and mutton were produced in Great Britain in the years 1913, 1930 and 1931, respectively?

The Minister of Agriculture (Sir John Gilmour): As the reply contains a number of figures I propose, with the permission of my hon. Friend, to circulate it in the Official Report.

Following is the reply:—

The estimated production of beef, including

veal, and of mutton, including lamb, in Great Britain in the three twelve-monthly periods ending May, 1913, 1930 and 1931 were as follow:—

	1913.	1930.	1931.
	Cwts.	Cwts.	Cwts.
Beef ...	11,444,000	11,756,000	11,006,000
Mutton ...	4,996,000	4,339,000	4,029,000

I would add that the figures for the last year are provisional and subject to amendment.

. . . . .

FIGHTING SERVICES (MEAT SUPPLY)

Lord Apsley asked the Financial Secretary to the Treasury the difference in the contract prices between foreign meat supplied to the Army, Navy and Air Force, respectively, and the similar prices which would have to be paid were the contracts confined to home-raised meat; and what, in each case, would be the aggregate difference in price between the supply of the foreign article on the one hand and the supply of the home article on the other?

Major Elliott: I am informed that the amount of foreign meat supplied to the Army, Navy and Air Force is less than 1 per cent. and that the balance is entirely of Dominion origin. If home-killed meat, which is not necessarily the same as home-raised meat, were substituted the cost would be approximately doubled. The extra expenditure would amount to about £600,000 per annum, of which the Army, Navy and Air Force shares would be £417,000, £100,000 and £83,000, respectively.

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IMPORTED MILK

Brigadier-General Clifton Brown asked the Minister of Health who were the principal importers of liquid milk during the last three months who were registered by the port sanitary authorities of London, Harwich and Newhaven; and whether any of the liquid milk imports came in pasteurised?

Sir H. Young: It is compulsory for importers of liquid milk to be registered with the local authority under the Public Health (Imported Milk) Regulations, and I do not think that I could properly give a list of the names of persons thus required to be registered. With regard to the last part of the question, there is reason to believe that most, if not all, of the imported milk in question is heat-treated before shipment.

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POULTRY DISEASES.

Major Carver asked the Minister of Agriculture whether he is aware that Newcastle disease and fowl paralysis are causing serious loss to poultry flocks in England; and, if so, whether he will consider engaging further research workers to trace the cause of the scourge and, if possible, find a remedy?

Sir J. Gilmour: I am informed that the incidence of Newcastle disease has greatly diminished during the last two years, and that it is not now a serious menace. I am aware of the serious losses caused by fowl paralysis, and my Department and the Agricultural Research Council are considering a scheme of research into this and other urgent problems of animal disease. Any such scheme can, however, only be brought into operation as finances permit.

Mr. Lawson: Can the right hon. Gentleman explain what is "Newcastle disease"?

Sir J. Gilmour: No, Sir, not in detail.

Mr. Lawson: Is it a disease which has arisen since the General Election?

HEAVY HORSE SOCIETIES (GRANT)

Mr. Drewe asked the Minister of Agriculture the amount of grant that will be available for heavy horse societies this season.

Sir J. Gilmour: I have made provision in the Estimates for a sum of £9,800 for the purpose mentioned.

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LED HORSES

Mr. Barclay-Harvey asked the Minister of Transport if he is prepared to amend the provisions of the Road Traffic Act with regard to led horses to eliminate the dangers involved in the present system of leading?

Mr. Pybus: My hon. Friend no doubt refers to the paragraph in the Highway Code on this subject. The paragraph was determined only after full discussion with organisations representing persons interested. While I cannot undertake to make any alteration at present, I shall be happy to consider any further representations that may be made when the Code comes to be reviewed.

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HORSES (RUSSIAN CONSIGNMENTS)

Mr. Smith-Carington asked the President of the Board of Trade the number of horses and ponies imported into this country from Soviet Russia during each of the past 12 months, together with the total value per month of such imports.

Mr. Runciman: The following table shows the total number and declared value of horses (including ponies) imported into the United Kingdom and registered during each of the 12 months ended January 31st, 1932, as consigned from the Soviet Union.

Month.	Number.	Declared Value.
1931:—		£
February to June ...	Nil	Nil.
July	34	340
August	Nil	Nil.
September	34	340
October	66	830
November	34	340
December	Nil	Nil.
1932:—		
January		

. . . . .

LIVESTOCK (LICENSING OF BULLS) ACT

Lieut.-Colonel Moore asked the Secretary of State for Scotland at what date it is intended to make the Livestock (Licensing of Bulls) Act operative in Scotland; and whether he can give an assurance that ample notice will be given before such action is taken?

Sir A. Sinclair: The intention is that the Act will be brought into operation in Scotland on August 1st next. The answer to the second part of the question is in the affirmative.

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In the House of Commons on February 11th the Minister of Agriculture (Sir John Gilmour), in the course of a statement concerning the Government's policy concerning agriculture, observed: "In regard to milk and milk products, the Government aim particularly at the improvement of marketing and have decided to set up a Reorganisation Commission under the Agricultural Marketing Act, 1931, with a view to the formulation of schemes. A corresponding scheme for the organisation of the milk industry in Scotland is already in an advanced stage of preparation. They will also investigate the means of securing a reduction of disease among dairy herds. Imports of milk and milk products are being dealt with under the Import Duties Bill."

Notes and News

DIARY OF EVENTS

Feb. 29th.—N.V.M.A. Editorial Committee Meeting at 2, Verulam Buildings, Gray's Inn, W.C.1.
March 3rd.—Meeting of the Central Division, N.V.M.A., at 10, Red Lion Square, W.C.1.
March 4th.—Yorkshire Division, N.V.M.A. Dinner-Dance at Leeds.
March 5th.—Annual General Meeting of the North of England Division, N.V.M.A., at Newcastle-on-Tyne.
April 1st.—R.C.V.S. Annual Fees due 1932-33.
April 6th.—R.C.V.S. Registration Committee.
April 7th.—R.C.V.S. Examination, Registration and Parliamentary Committees.
April 8th.—R.C.V.S. Library and Finance Committees; Council Meetings.
April 11th.—N.V.M.A. Committee Meetings. Edinburgh.
April 12th.—N.V.M.A. Council Meeting, Edinburgh.
May 5th.—R.C.V.S. Last day for Nominations for election to Council.
May 12th.—D.V.S.M. Examination entries due.
May 19th.—R.C.V.S. Council Election Voting Papers issued.
May 26th.—R.C.V.S. Last day for receipt of Voting Papers.
June 2nd.—R.C.V.S. Annual General Meeting. V.V.B. Fund Annual General Meeting.
June 9th.—D.V.S.M. Written Examination begins.
June 13th.—D.V.S.M. Oral Examination begins.
June 29th.—R.C.V.S. Committee Meetings begin.
June 30th.—R.C.V.S. Annual Dinner.
July 1st.—R.C.V.S. Council Meetings.
July 6th.—R.C.V.S. Summer Examinations begin.
Aug. 8th-13th.—N.V.M.A. Jubilee Congress at Folkestone.

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THE LADIES' VETERINARY BENEVOLENT GUILD

As reported in another column, the Ladies' Veterinary Benevolent Guild has now been safely launched, and the enthusiasm shown by the ladies present at the meeting on February 11th is a good augury for its success. Lieut.-Colonel Simpson had a very sympathetic reception when he described the objects of the Guild, and we feel sure, from the list of officers chosen, that he had passed over the venture into competent hands.

Most tangible proof of what can be done by the wives and daughters of our members has recently been given by the ladies of the North of England. We therefore heartily and confidently commend the objects of the Guild as being eminently such as to appeal to the heart of all ladies and to deserve their support. The Victoria Veterinary Benevolent Fund is relieving widows and little orphan children who otherwise might have to go to the workhouse, and it needs an increase of its income if it is adequately to supply the needs of those who, having lost their bread-winners, have been left destitute.

We fervently wish the Guild God-speed.

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PERSONAL

Appointment.—Mr. James Chalmers, M.R.C.V.S., late Government Veterinary Surgeon in the Transvaal, has been appointed Veterinary Officer in charge of the Serum Department of the South African Institute for Medical Research. Mr. Chalmers is also Veterinary Officer in charge of quarantine stock at Johannesburg, officially representing Bechuanaland, Southern Rhodesia, Swaziland and South-West Africa. Our colleague has thus found plenty of work to do in his retirement, and we wish him long life and good health.

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Birth.—At the Brunswick Nursing Home, Cambridge, on February 19th, 1932, to Janet Martin, wife of Hugh Cooper, Indian Veterinary Service, a son.

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Mr. Ernest Wilkinson.—His many friends in the profession in the south will regret to learn that Mr. Ernest Wilkinson, M.R.C.V.S., of Witney, Oxon, whose life was despaired of last summer, has had to enter the London Hospital for a further operation upon his injured leg. We are glad to be able to state, however, that he is now making very satisfactory progress.

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R.C.V.S. OBITUARY

Carter, James Richard, Haslemere, Surrey. Graduated London, January 6th, 1879; died February 19th, 1932, aged 73 years.

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VETERINARY COLLEGE OF IRELAND DANCE

There were 500 guests at the annual dance of the Veterinary College of Ireland recently held in the Metropole Ballroom, Dublin. Those present included members of the London (Veterinary) R.F. Team; also Professor and Mrs. Craig, Professor and Mrs. O'Connor, Professor and Mrs. Browne, Miss D. B. Taylor (Hon. Secretary), Mr. and Mrs. Lambert, Miss N. Spiers, Miss Doherty, Mr. and Mrs. Brennan, Mr. and Mrs. Lamont, Mrs. Ward, Mrs. Fahy, Mrs. Kent, Mr. and Mrs. Ryan, Mr. Pilkington, Dr. Thompson, Mr. O'Riordan, Mr. Reeves, Mr. Sweeney, Mr. Sheehy, Mr. Campbell, Mr. Mullany, Mr. Griffin, Mr. Collins, Mr. Maurice and Miss Richardson, Mr. Caffrey, Mr. Durkin, Mr. Fox, Major Cusack, Mr. Redmond, Messrs. D. O'Connor, H. Lambert, R. J. Power, M. Finucane, J. O'Hara, F. Taylor, D. Allen and C. Peat.

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ARMY VETERINARY SERVICE

London Gazette—War Office—Territorial Army Reserve of Officers

February 19th.—Major E. S. Martin having attained the age limit retires and retains his rank, with permission to wear the prescribed uniform (February 20th).

R.C.V.S. ANNUAL DINNER

We are pleased to be able to announce that H.R.H. The Duke of Gloucester has promised to attend the Annual Dinner of the College this year, and to speak. Readers are asked carefully to note the date—June 29th. Further particulars will be published later.

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BOVINE DENTISTRY

Dr. A. F. Schalk, Professor of Preventive Medicine, Ohio State University, draws attention to the fact that cows have elongated cheek teeth, similar to those of horses, that interfere seriously with remastication; that these teeth may well be treated as in horses and equally good results will follow.

Practitioners of wide experience who have had frequent occasion to introduce their hands in cow's mouths will concur in Dr. Schalk's suggestion that veterinarians might profitably give more attention than they do to bovine dentistry.

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THE THOROUGHBRED AND HUNTER SHOW

Many thoroughbred stallions, well known to followers of the turf, will be exhibited at the Thoroughbred and Hunter Show at the Royal Agricultural Hall on March 1st to 3rd, under the presidency of Sir Walter Gilbey, Bart., and at which H.R.H. Prince George will be present on the Wednesday afternoon.

Periosteum, the winner of the 1921 Ascot Gold Cup, will be competing for one of the £100 King's Premiums, and others equally well known are "King Sol," winner of the 1919 Stewards' Cup, Goodwood; "Silver Band," who won the Liverpool Spring Cup in 1924; and the 1925 winner of the Ascot Gold Cup—"Kentish Knock." "Fennimore Cooper," winner of many races in France (including The Priz Noailles, Paris), will be exhibited by Mr. R. C. Irving, while the champion stallion of last year—"Monksford"—will again endeavour to retain his supreme laurels—H.M. The King's Gold Cup—against the 109 entered.

In the Hunter and Light Horse Section of the Show, an excellent entry of 20 colts, 44 mares and fillies, and 70 geldings has been received. Lady Helen McCalmont will be showing her chestnut gelding, "Handley Cross," champion at London, Olympia, Richmond and many other shows in 1931, and though the champion young hunter of last year, "Cresselly," is now ineligible to compete for the cup, this gelding is to be exhibited in the four-year-old class. It should be interesting to see whether the runner-up last year, *viz.*, Mrs. Franks' "Rosemary V," now a three-year-old, will be able to gain the Prince of Wales' Cup for the best young hunter, against the 89 animals entered in the young stock class.

Among the 142 exhibitors is The Earl of Rosebery, exhibiting his stallion, "Annaly," while Lady Hinsworth, Lady Chesham, Lady Beryl Groves and the Dowager Lady Penrhyn are among the 37 ladies who have entered.

A parade of all the premium stallions will take place on the Wednesday, March 2nd, to be followed by an exhibition class of Army horses (provided by the War Office) and consisting of one R.F.A. Gun Team, cavalry chargers, and artillery light draught horses.

In all, 320 horses will be on exhibition, while jumping over hurdles, etc., with a water jump, will take place on each afternoon, Lady Wright being among the competitors in this latter section of the show.

Correspondence

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

All correspondence must bear the name and address of the contributor for publication.

The Editor does not hold himself responsible for the opinions of his correspondents.

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RESPECTIVE MEMBERSHIPS R.C.V.S. AND N.V.M.A.

To the Editor of the Veterinary Record.

Sir,—The list published in the *Veterinary Record* of February 13th of the number of veterinary surgeons who are members of the N.V.M.A., is somewhat misleading, at any rate as far as Devonshire is concerned.

I take it that the total of resident veterinary surgeons in Devon was taken from the 1931 register of the R.C.V.S., which is stated to be 40. Of that number, 29 are members of the "National," a further four are out of practice, two had left the county before August, 1931, leaving only five non-members. This gives a percentage of over 85, instead of 70 as stated.

Yours faithfully,

Dix's Field, Exeter. R. Barons Nelder.

February 15th, 1932.

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BRIGADIER FLEMING

To the Editor of the Veterinary Record.

Sir,—*A propos* your reference to Brigadier Fleming, I think your readers will be interested to read the following extract from a letter addressed to my predecessor by Dr. Fleming on March 8th, 1900, *i.e.*, at the time of the South African War:—

"I suppose you have heard that my eldest son whom you saw last December in Red Lion Square, has joined the Imperial Yeomanry and is now on the way to South Africa. Early in January the war fever suddenly seized him, he gave up his medical studies, and got Lord Ebrington to enter him in the North Devon Yeomanry, with the view of being transferred to the Imperial Yeomanry for Active Service. He is an excellent shot and rides well; so he will do, but breaking off his studies is a serious business . . . . Yours sincerely,

George Fleming."

The father's confident "so he will do," has been fully justified.

Yours faithfully,

Fred Bullock, *Secretary.*

Royal College of Veterinary Surgeons,
10, Red Lion Square,
London, W.C.1.

16th February, 1932.

The Editor acknowledges the receipt of the following:—

"The Lymphatic Glands, Jointing of Carcasses, and Animal Anatomy." (Drawings for Students of Meat Inspection), by James Goodfellow, M.S.I.A.

Communications from Messrs. J. M. Armfield (Chipstead), Esmond Brown (Ministry of Agriculture), W. H. Brooke (Birmingham), Max Henry (Sydney, N.S.W.), C. G. Hopson (Golders Green), C. H. Huish (Redhill), Major H. Kirk (Finchley), A. D. McEwen (Wye, Kent), W. C. Miller (Edinburgh), J. F. D. Tutt (Winchester), W. Tweed (Sheffield), Major R. F. Wall (Bayswater), Dr. W. R. Wooldridge (London), Professor J. G. Wright (London).

Reports of meetings from the Hon. Secretaries of the following Divisions, N.V.M.A.:—Lancashire, Lincolnshire and District, Mid-West and South Wales, Royal Counties, Yorkshire.